The Mining Journal
RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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COAL MINING IN AMERICA.

We quote the following interesting particulars of the first operations in a new coal district from an American contemporary, the *Miners' Journal*.—The editor, in company with a party of gentlemen, visited the new Meckenburgh Collieries, which have been lately opened in the Broad Mountain, upon the two largest veins in the region known as the "*Jugular*" and "*Daniel's vein.*" The property upon which these mines are located, is owned by Mr. George A. Mecke, of Philadelphia, and the operations are carried on by Messrs. Wynkoop and Beatty, who have leased the works for the term of ten years. The Mine Hill and Schuylkill Haven Railroad, over which we passed, is the best road in the district, and a ride upon it is perfectly easy and delightful; joined to this the scenery which presents itself at every turn is wild and magnificent, inducing in us a feeling of gratified pride in the local industry and enterprise which has enabled our citizens to penetrate almost inaccessible places, and under such disadvantages to bring forth into light and profit the hidden treasures of our region. The railroad attached to the Meckenburgh Collieries, over which we also travelled, is about 1½ miles in length, and being of a gentle grade, is admirably suited for the purpose to which it is intended. When we arrived at the collieries, we strolled around to view the operations. The improvements, consisting of railroads, shutes, platforms, and ten dwelling-houses, have all been constructed within the period of one year. Everything connected with the operations is constructed upon the most permanent principle, and the cost of preparing the works, as we are informed by Mr. S. B. Fisher, under whose superintendence it has all been arranged, will amount to about $[illegible]. The Jugular vein upon which the upper drift is driven, is twenty feet in width, and the Daniel's vein is about sixteen feet. The coal in both veins is a pure white ash, and is known throughout the region and elsewhere, to be a superior and prime article. Messrs. Wynkoop and Beatty are about arranging a new machine for the purpose of breaking coal by which they propose to save one-fifth of the labour usually expended upon that operation, at the same time making a cleanlier and more regularly broken article; we saw the machine in partial operation, but owing to the want of permanency in its construction, could form but an imperfect idea of its effects. Mr. Mecke invited us to walk with him a short distance below the mines, where he exhibited a comfortable dwelling, having attached to it a very large and flourishing garden, filled with vegetables, fruit, and even flowers. Such a sight in a complete wilderness, almost inaccessible by either road or path, was refreshing in the extreme, and when we remembered the short space of time in which all these improvements were made, seemed almost incredible. In addition to the improvements already made, we learn that the proprietor is about erecting ten other houses for miner's dwellings, and also a large stone mansion, for the residence of the superintendent, which was then progressing. After seeing all appertaining to the works, we prepared for our departure, and returned to Minersville without horses, the plane being sufficient to carry us down without any other motive power—the movement was rather a tardy one until we arrived at the incline at the northern entrance of the Mine Hill Gap, when giving the cars their full headway we came down the road with the rapidity almost of thought. A train of cars, containing the first coal mined at the collieries was loaded on Monday, for Jacobs and Hasselbane, Philadelphia, and left for its destination a short time after we started.

THE QUICKSILVER MINES OF IDRIA.

The following article, on the Idria quicksilver mines—containing the most graphic description of them we have met with—is taken from an excellent work, *The Austrian Empire*, by W. Blumenbach, Vienna:—

The mines of Idria are situated in Carniola, an Austrian province, about ten leagues from Laybach. This town is built at the junction of three valleys, and watered by three torrents, which fall into the river Idrizza. In 1833 Idria consisted of 300 houses, and contained 4130 inhabitants, who, though their chief occupation is mining, find employment also in the manufacture of linen cloth and lace, and the distillation of the juniper-berry. The works connected with the quicksilver mines are entered, nearly at the centre of the town, by a huge door of iron grating, which confines several hundreds of persons in the bowels of the earth. When you have entered the gate, you find yourself on a dark, but high arched road, cut through rocks, and carried in the same direction, for a considerable distance, to a point, at which it descends by a flight of 757 steps, cut in limestone; these are kept in excellent repair, and furnished with a hand-rail. In a short time you come to a lateral excavation, used as a chapel, in which the miners are accustomed to offer up their prayers before they encounter the perils of the mine; on an altar in this chapel there are always to be seen two lighted candles, scarcely breaking the gloominess of this domain of darkness. Further on you come to the first resting place, from which there are several passages, or galleries, all branching off in various directions, and some terminating in the "*Fields of Hope*" * (Hoffnungs-Schlage), so called, because the riches which they promise are often left untouched for a long time; until, perhaps, the miner, having reached the extremity of the vein he is working, finds himself compelled to turn elsewhere, in the hope of doing better. At last you come to the bottom of the steps, and turn into a lateral passage; in this subterranean labyrinth, the stranger being entirely dependent on the guide, follows his lantern with an anxiously measured pace, while the miner or barrowman proceeds fearlessly along the same way, without a glimpse of light, although a single step to the right or to the left would bury him in an abyss; a solitary miner is sometimes met with, and the gloom of these regions gives a certain solemnity to the sound of his "*Glück auf*"†—the German miners' usual salute. As you pass onward, the operations are announced by a sound similar to that made by the wood-cutter, until a turn in the passage brings you upon the miners themselves, working in pairs, by the light of a lantern—which shows their spectral forms, consigned, as it were, to sepulchral darkness, before the breath of life had left them.

The ore is mostly dug out with picks. Drops of the pure liquid metal are to be seen all over the place. Notwithstanding the interest of the scene, one soon feels a longing for a little fresh air; for the inhaling of the quicksilver vapour is unwholesome, and the heat—which, in some of the galleries or chambers, exceeds, even in the month of September, 20° of Reaumur—is oppressive almost to suffocation. The temperature, however, suddenly changes as you approach the main shaft, into which there enters, from above, a cool current of atmospheric air. In this the *tun* (or square box) is placed, by means of which the collected ore is raised from a depth of 1[illegible] fathoms. A second tun is employed in carrying up the official visitors of the mines, and strangers; this box, which is open at the top, you enter by a small door; an overseer sets himself astride on it, above the head of the stranger, pulls a bell-rope that hangs down into the shaft, and then takes hold of the rope by which the box is raised; thus, in eight minutes, you are restored to the upper regions, but at a considerable distance from the place at which you had entered, and find yourself in the midst of objects of a very different description. Here are the rest of the works, including the pumps, by which the water that collects in the interior of the mine is raised from a depth of 1[illegible] fathoms, and conveyed to the river Idrizza. Near the work there is a model of it, which enables you to examine its mechanism and action, on a small scale. The way from this leads to the works for pounding and crushing the ore, whence, after being ground fine, it is conveyed, through narrow troughs,‡ to the slime and washing-houses (schlim und wasch häusern); in these there are placed, in an inclined position, gutters made of deal boards, over whose sloping surface those particles that contain no ore are washed away, while those that contain it are, by their own weight, prevented from being carried off; in one of the latter places, the earth is separated from the ore by a process which the German miners call *sitzen*, because it consists in shaking the movable troughs, by means of an hydraulic machine. Here one may see the pure virgin quicksilver now presenting itself in drops, separated from the ore, and made to roll into the gutters, in which it is gathered. The collected and slimed ore is now conveyed to the kilns or furnaces; although these infernal fires threaten death and destruction, the smelters, hardened as they are by habit, approach them undismayed. A furnace of this kind consists of seven compartments, communicating with each other by means of air tubes; the upper arch of the first of these is a stone grate, on which the richer ore is laid in masses (stufen), and the washed ore in thin plates (teller); the metal is sublimated by the consuming fire below, and flies off in vapour, through flues (abzugsofnung) into the adjoining coolers (kühlöfen), being precipitated in drops of pure metal, resembling small rain, flows into a reservoir placed outside to receive it. Hence it is taken with pails in portions weighing fifty pounds each, and then well secured in leather bags.

An apprenticeship is said to be requisite to the attainment of skill in any business, and to prevent any of the quicksilver from escaping in the tying of one of these bags, however easy it may seem, will be found on trial rather a difficult task for an unpractised hand. In connection with the works of this mine, there is a cinnabar manufactory, which produced annually from 1000 to 1500 centners of this article. The men engaged in this work all look quite red, while those engaged in the other works look black and sooty. In a building set apart for this particular purpose, the quicksilver is put with sulphur and coal ashes, or coal dust (kohlenstaub), into small vessels, and amalgamated with them by continual rolling. In another apartment this mass is put into retorts of clay, and calcined in a red hot furnace. The retorts being now broken, the [illegible] cinnabar, which is formed in crystals in their cracks, is taken out and brought to the mill. Here it is ground with water into powder and fine [illegible], then dried, and being, like the quicksilver, well secured in leather bags, is put into the [illegible]. A third part only of the miners are employed upon the extraction of the mineral, and the two other for the discovery of it. This expense is necessary with the view of equalising [illegible] for the future, and it is this system and prudence, in not overworking, which have preserved the prosperity of the mine. In Bohemia, on the other hand, and in England too, speculators too often exhaust the richer parts, and abandon the rest, which, had they been better worked, would have been equally profitable in the end. The richest part of the mine is in the middle, but it is almost always left untouched, and the most active workings are directed to the inferior levels. The smelting kilns, or furnaces, yield in general from 600,000 to 700,000 lbs. of mercury annually, of which 100,000 to 120,000 lbs. are converted into cinnabar or vermillion, into mild or corrosive sublimate, and into red precipitate. Idria produced in the last century only from 200,000 to 300,000lbs. weight annually. As a remarkable commercial enterprise, and Government fraud, may be related here, that in 1786 the Imperial Government undertook by a treaty to furnish Spain with a million pounds of mercury, for the working the mines in Mexico and Peru; but the Idria Mine could not regularly afford this enormous quantity, or it would have been exhausted by such a forced working.

[We shall next week publish a description of the same district, at a later date, from the interesting Travels of Dr. Turnbull.]

* In the Idrian [illegible], [illegible] appears to be meant.
† "Glück auf!" "success!" "with you luck."
‡ In the German mining language, called rinnen.

SMOKE NUISANCE.

SUMMARY OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE OF THE HOUSE OF COMMONS, ON THE SMOKE NUISANCE.

[Continued from last week's Journal.]

Dr. URE went on to explain the principles on which atmospheric air should be introduced to the gases generated in a furnace—the object being to effect their perfect combustion, and thus prevent the formation of smoke. The hot hydro-carbonate gas, he observed, occupying the upper region of the furnace, cannot get mixed with the air, while the former is yet in its incandescent state, and, therefore, cannot be consumed. The intermixture must take place before the gases have fallen in temperature; therefore, it should be by some thorough blending process, and the invention of Mr. C. W. Williams satisfies this condition. The air passes through a great number of small apertures, and, by this means, it gets thoroughly intermixed before it loses the temperature of incandescence, and thus insures its perfect combustion. In furnaces a great deal of carbonic oxide is formed, which also thus gets its additional dose of oxygen. The air passing up through the bars is for the combustion of the coke, while the air passing through the chamber and its numerous apertures is for the combustion of the gases; the carbonic oxide formed being also burnt, escapes as carbonic acid. By this means the whole of the fuel is entirely burnt—only half the heat is given out when the carbonic oxide is formed. When the fireman sees any smoke, he admits the air. The furnace bars should be covered, and no holes left in the fuel; after a little time, in every furnace, the fuel burns into holes, and by which means, the air passing up through them, carbonic oxide is formed, and this requires its portion of air also. To know what heat is produced, Mr. H. Houldsworth, of Manchester (whom the Doctor described as his old pupil), has contrived a very ingenious pyrometer, which consists of a long wire, acting on a bent lever; the long leg of which traverses along a graduated arc—thus the workman sees the degree of heat in the furnace. The first process in the furnace is coking, and, during that process, much gaseous matter is given off, which, in the ordinary plan, cannot be consumed; and, as the hydrogen of the gas gives off three times more heat than the carbon or coke, this produces a great loss, if not burnt. If you burn a pound of carbon, you get only one-third of the heat you get from a pound of hydrogen; so that, in hydrogenous or bituminous coals—as Newcastle coals—the hydrogen gives three times more heat than the carbon. It is the bituminous coal which produces the greatest nuisance from smoke, and which has not hitherto been rightly viewed. Formerly (the Doctor said) he attached much importance to the mode of feeding the fires gradually, as by Brunton's furnace, which he described. With Mr. Williams's furnace, as you can shut off the air, and reduce it to the plan of a common furnace, you can institute the most accurate experiments. It is found that, by opening the hole and admitting the air, the smoke disappears, and the evaporation increases in the ratio of 10 to 8—so that, with the same fuel, you evaporate 10 lbs. of water, and but 8 lbs. only, when the aperture is closed.—With respect to heating the air (the Doctor continued), it would not be any improvement; and he stated, decidedly, that a simple plan may be adopted, that would not only prevent smoke, but likewise save fuel. With respect to durability, the Doctor further observed, that the perforated plates stand admirably for years, and without any trouble—the fact is, they are kept cool, and not exposed to any great heat. To a question respecting Mr. Watt's principle, of not putting the coal on to the fire, by means of a hopper, until it was coked, Dr. Ure observed, that that produced a great evil, as the carbonic acid formed in the front part became carbonic oxide in the other. Mr. Watt thought that, in preventing smoke, he had accomplished the sole object; by more minute investigation, however, it is now found, that what is called the destruction of smoke, in many cases, is merely the production of carbonic oxide, the destruction of the fuel, and the pollution of the atmosphere. With respect to Mr. Williams's plan, which is a simple and effectual one, the Doctor stated that he understood that he will meet Parliament more than half way, and not allow his patent to be any obstacle to the universal adoption of his principle. The plan has been adopted in many furnaces, and Mr. Houldsworth (of Manchester), who has adopted it, has given a very favourable report of it. I have known many patents, but there is none in which that blending of the gases with the atmospherical oxygen admitted from many orifices has been so well effected.—In conclusion, the CHAIRMAN observed, "To come back to the first position, your decided opinion is this, that the means of preventing smoke from fires and furnaces are feasible." *Answer*—Yes. *Question*—And that it would be eligible for manufacturers to be obliged to adopt them? *Answer*—That is quite my opinion.

Mr. JOHN CHANTER, the next witness, said that, after fourteen years' experience, he was of opinion that smoke can be consumed with considerable advantages to the manufacturer. He had taken out a patent for the improvement of Whitty's patent, and had joined some engineers at Liverpool, and taken out other patents. Some years ago he had hundreds of engineers attending where he had a furnace, and every one saw that there was no smoke whatever from it. He had put up a 1000 furnaces. At first several failed, but now he did not know of one doing so. He had guaranteed a saving of 10 per cent. upon steam-engine boilers, and 20 per cent. on the fires of dyeing-pans. He then described his plan. Since the meeting at Leeds, he had bought two additional patents, and made a combination with his own. The present patent which he submitted to the committee is not the same as was proposed to the Leeds committee. The principle of his patent was much like Mr. Williams's, but with a totally different arrangement. He thinks smoke, after it is once formed, cannot be burnt. His plan is a union of several different plans, twelve in number. He applies his plan by double fire-grates, which are under the whole of the boiler; one is under, a little inside, and he keeps up a heavy coke fire. He recommended paying the stokers in the manufacturing districts 1s. a-day extra, and that little difficulty would then occur in doing away with the nuisance. The majority of the firemen are of the lowest grades, but by paying them better the nuisance would be got rid of.

Mr. HENRY DIRCKS, the next witness, was particularly acquainted with the argand furnace of Mr. C. W. Williams, was practically acquainted with the mechanical details, and was also well acquainted with chemistry, and its connection with combustion. Had erected above 100 furnaces on Mr. Williams's plan within the last eighteen months, and it had since been applied to many steam-vessels. The expense was about from 5l. to 8l. for each furnace. The saving he found to vary from 10 to 30 per cent.; this arose from the various qualities of the coal, some producing more gaseous matter than others, and, of course, more economy by their combustion. Besides, some furnaces are already carefully managed on the common plan, and, of course, there is less room for improvement, and, therefore, there cannot be so great a saving. Still there is always a saving by effecting the burning of the gases. As to preference of plans, there is none which effects the same perfection as to the mixing of the gas and air; and, of course, so complete a combustion of those gases. On being asked to describe the chemical principles of this argand furnace, Mr. Dircks said, the principle is that gas emanating from coal, requires much atmospheric air. There is no novelty in the principle of admitting air, but the novelty is in the mode of applying that principle—viz., in dividing the air by a great many apertures or jets. Every measure of gas requires ten measures of air; but if you admit the proper quantity in a body, or in bulk, it overpowers the gas, and cools it; it is like pouring oil on the wick of a lamp. *Question*—"The secret then is to admit just sufficient supply of air to create combustion?" *Answer*—"Yes, and to get it mixed immediately." It would mix in the furnace, but the loss of time would cool the furnace; the jets, or divisions, makes the mixture immediately. With respect to apportioning the quantity of air required, Mr. Dircks observed, that the orifice for its admission being adjusted, no more adjustment is required than for the argand lamp. When you ascertain by observing the chimney, that a given quantity will produce a bright flame in the flues, and the chimney free from smoke, then you have a safe gauge, and are not admitting too much. By an experiment, the valve was kept open the whole day, and by a meter attached to it, the air had to pass through the meter, and the quantity was ascertained. On each charge being put on the furnace, an increased rapidity was given to the meter, showing an increased quantity of air admitted; but as the quantity of gas diminished, the admission of air diminished also, as indicated by the meter; the natural demand for the air thus adjusting itself.

[To be continued.]

THE AERIAL MACHINE.—(*From a Correspondent.*)—We are informed that Messrs. Adams and Fox, the extensive engineers at [illegible] Bow, have taken the contract for building the line of machines intended for navigating the air.

LAW INTELLIGENCE.

IMPORTANT CASE—DEE BANK COLLIERY COMPANY.

CHESTER ASSIZES—AUGUST 14.

HANMER *v.* EYTON AND OTHERS.—[This cause excited considerable interest, in consequence of the amount of property at stake, the damages being laid at 200,000l.]—The SOLICITOR GENERAL stated the case, to the effect that the plaintiff, Mr. W. Hanmer, was the trustee of Sir John Hanmer, under the will of the late Sir Thomas Hanmer, who was possessed of considerable estates in the county of Flint, including the mine in the parish of Flint, known as the Dee Bank Colliery, and which it was complained had been destroyed by the negligent or wilfully wrong acts of the defendants, the Messrs. Eyton, large mining proprietors, in the same county. The property in question borders the river Dee, and consisted of several valuable veins of coal; the dip was from the uplands down towards the river; the veins were the three and five yards, which were very valuable, and dipped under the river. In 1826 it was leased to parties named Howells, for twenty-five years, reserving a royalty of one-seventh. It was since worked by the Dee Bank Colliery Company. Adjacent to this colliery was one worked by the defendants, leased from Dr. Richardson. About forty five years ago the late Mr. Ellis, of Cornist, worked Sir John Hanmer's mines, and several also of the adjacent mines. He worked through two faults, and opened into one, which let in an immense body of water supposed to be tapped from the river Dee, which filled a large space underground, and formed a sort of subterranean lake, known as the boot water, from the Boot Colliery; and which was kept out of the rest of the collieries by a fault. This body of water was well known to all the colliers, and it was also known, that if the fault was disturbed, it would have disastrous effects upon all the adjacent collieries. The defendants began to work their mine at Bagillt about eight or nine years ago, and had nearly exhausted them. It was so situated, that water flowed from it into the pits, whose engines had to remove it. About three years since they sunk a pit towards the fault which was the barrier against the boot water. Notice was given to their agent that they were proceeding in driving levels, which would destroy all the collieries; and which notice was repeated. He should prove by their own workmen that this notice was given, and that they continued to work towards the fault in question. The accident happened on Sunday, the 2d of July last; and it was providential that it happened on that day, as 100 lives might have been lost; the boot water burst in, and first destroyed the defendant's pits, and then the plaintiff's pits. In the first instance, the defendants offered to pay the expense of draining the plaintiff's pits; but the learned counsel said he was instructed that that could not be done, but that the colliery was totally destroyed. With respect to the question of damage, he entered into a variety of calculations, by which it appeared that for some years the royalty had averaged annually about 1547l.; and that there were about ninety-one acres of the three and five yard veins, which gave a gross tonnage of 2,344,427, but deducting the usual per centage, the net tonnage would be about 1,667,[illegible] tons. It would take ninety years to exhaust these beds. He entered into two calculations founded upon different scales; one came to 20,194l., the other to 30,944l. After some further observations, he stated that he should sustain his statement by evidence; and as Sir J. Hanmer had lost his property by the default of the defendants, he was entitled to full compensation at their hands.—Among the witnesses called to prove the case, as stated by the learned counsel, were Mr. John Buddle, mining engineer, of Wallsend, Northumberland, Mr. Robert Dalgleish, of Orrell, and other eminent coal viewers.—Mr. Buddle said, he had twice viewed the colliery. He now found all the pits filled with water up to the usual high water mark of the Dee. He had previously surveyed the colliery in 1817, and knew of the Boot water, which would have been kept out, if the fault had not been worked, and the barrier too much weakened. He had no data, to ascertain whether the pit could be cleared. If the water is from the Dee, it comes through a quicksand. He had made careful calculations of the value of the property, and found Sir John Hanmer's interest to be 30,944l. 10s.—Mr. Dalgleish said, he had been concerned in the management of collieries forty years. He entirely agreed with Mr. Buddle; and did not think the pits could be drained.—Nearly all the witnesses agreed that, if the fault had not been worked through, the works would not have been drowned.

Mr. JERVIS, for the defendant, contended, that, but for the circumstance of the Solicitor-General having been retained, this was a mere ordinary case. The insinuation was, that the cruel injury of which he complained had been wilful, and might have amounted to murder; the best answer to which was, that Ledsham, who had the management of the workings, and always thought he was going on safely, had left his own son working there, whom it was not very likely he would thus unnaturally sacrifice. He contended that Mr. Buddle's calculations were all based on ideal lines. It was proof the water was not from the Dee, because it was fresh; and therefore it was probable the mine might yet be drained. It was perfectly accidental and unavoidable, and for which his clients were not answerable, who had already suffered so much.

Baron GURNEY having summed up the evidence at considerable length, and the jury having retired for two hours, returned a verdict for the plaintiff—damages within the boundary 1614l., without the boundary 4613l.—total 6227l.; with liberty for the defendant to move to reduce the damages to 1614l.—the value of the property above the boundary of the Dee.

The effect of this verdict may be, the exclusion of Sir John Hanmer's right to lease the coals beyond the boundary.—The Crown mineral agent watched the case; and it is not unlikely that a claim may be set up on behalf of the Crown.

MOORCROFT IRON WORKS.

OXFORD CIRCUIT—STAFFORD, AUGUST 16.

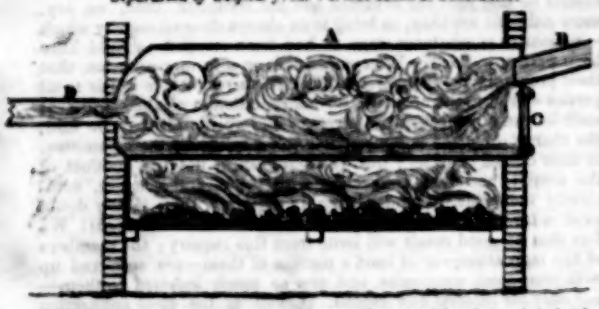
FOLEY AND ANOTHER *v.* ADDENBROKE.—This was an action brought by the lessees of the Moorcroft Iron-Works against their lessor, to recover damages for several alleged breaches of the covenants contained in the lease. This case, the details of which were wholly uninteresting, except to the parties concerned, occupied the court for upwards of eight hours, and at length, by the earnest recommendation of the learned Judge, a verdict was taken for the plaintiffs, subject to a special case.

STEAM-ENGINE NUISANCE.—At the last monthly meeting of the Birmingham Street Commissioners, Mr. Haines read the following report from the committee appointed to watch over this subject:—"The committee appointed to consider the nuisance arising from steam-engines, have the satisfaction of reporting that, in many cases, during the last few months, some one or other of the important methods in use for consuming smoke have been adopted by the owners of steam-engines, and with great success, and the committee trust that, before the commencement of the ensuing year (the time appointed at a former meeting of the commissioners), the nuisance still existing in too many parts of the town will be removed. But if the contrary should be the case, the committee will be prepared to recommend the most active measures against all parties who shall have neglected to use some efficient apparatus for consuming the smoke. The committee having ascertained that a committee of the House of Commons has been appointed specially to consider the subject, they report that they have placed themselves in communication with that committee."—Mr. Turner expressed a hope that the report would prove satisfactory so far as it went, but it was very much to be regretted that their fellow-townsmen should have exhibited such an indisposition to apply remedies for abating the nuisance. He referred particularly to gentlemen holding public situations in the town, and members of their own body too, who had hitherto neglected to come forward and set a good example to others. Mr. Turner noticed the fact that out of 138 steam-engines in Blackburn, there were only four in which some description of smoke consuming apparatus had not been applied, and he considered it a disgrace to their town that the steam proprietors of Birmingham should have exhibited so much apathy in a matter of such great importance to the health of the inhabitants. Several gentlemen had informed him of their determination to do away with the nuisance, and he trusted their example would be generally followed, and that parties would not postpone the adoption of measures for remedying the evil until the termination of the period fixed by the commissioners.—Mr. James James moved the adoption of the report, and had the satisfaction of informing the meeting that he had not only found the adoption of a remedy practicable in his own case, but that some spirited neighbours of his, whose works were beyond the control of the commissioners, had also followed a similar course. He had no doubt that an appeal to the good feeling of the inhabitants would accomplish all that they desired, as he could state from his own experience, that the smoke of steam furnaces could be consumed, not only without difficulty or inconvenience, but with an absolute profit arising from the saving in the use of fuel.—After a few words from Mr. Marshall, the report was adopted.

NEW METHOD FOR THE PERFECT SEPARATION OF SULPHUR FROM MINERAL SULPHURETS.

In the last Number of the *Mining Journal* we gave a short notice of Mr. Rodgers's plan for separating *all* the sulphur from iron pyrites, or other minerals containing it. The difficulty in separating this element from the ores, and the extreme tenacity with which it combines with those metals of the greatest use to mankind, and which Nature has so bountifully distributed through every mining district, has hitherto been a continued source of annoyance and expense to the smelter—poisoning the atmosphere, in the vicinity of metal works, with the most deleterious gases, and vastly adding to the cost of the metal to the consumer. Numerous have been the inventions to effect this desirable end, but hitherto only partially successful; and in the Journal of the 5th inst. we briefly noticed a patent, obtained by Mr. Longmaid, of Plymouth, for a process for separating sulphur from various ores, by the roasting them, in a state of coarse powder, in a reverberatory furnace, with an excess of salt; and of such vast importance do we consider the subject—not only to the mining interest, but to the community at large—that we feel it our duty to return to the subject. By the process invented by Mr. Longmaid, a mixture is obtained of a granular ashy texture, containing sulphate of soda, chloride of sodium, a soluble salt of copper, oxides, and other salts of iron or copper, according to the nature of the ore employed—substances of great value in the arts, but which require much further manipulation before the pure oxide of the metals can be obtained; and processes of filtration, precipitation, &c., must be gone through before the other compounds can be separated. The reverberatory furnace employed is also complex in its formation, and the operations, in consequence of the mixture having to be passed over four beds in the furnace, to obtain gradually different degrees of temperature, require much care. These observations are not made from any desire to depreciate the character of the invention, as it, undoubtedly, in its development, shows a thorough knowledge, on the part of the inventor, of chemical affinities, is highly creditable to his persevering ingenuity, and will, no doubt, be of importance in the arts; but where simplicity and economy are so indispensable, as in the mere separation of sulphur from metallic ores—by the production of the former element rendering us, probably, independent of foreign countries, and in greatly reducing the expense in the reduction of the pure metal; we think Mr. Rodgers's simple, yet highly interesting, process (the specification of which we give below) a desideratum in the arts long been sought after, and affording another instance, among the many, in scientific pursuits, of the advantages to be acquired by the application of a simple principle, when properly directed.

Specification of J. E. D. Rodgers's *Patent for Certain Improvements in the Separation of Sulphur from Various Mineral Substances.*



My invention of improvements in the separation of sulphur from mineral substances is founded upon the affinity of hydrogen for sulphur, and oxygen for certain metals. The improvements consist in conveying steam through the furnace or retort during the operation of roasting or calcining mineral sulphurets, previously reduced to coarse powder; the hydrogen of the water, or a certain portion thereof, combining with the sulphur of the ore and forming sulphuretted hydrogen, and the oxygen previously in union with the hydrogen combining with the metal, forming an oxide of the same metal. In order to give every information in my power, I have, in the accompanying drawing, shown one method of carrying my invention into effect, but I wish it to be distinctly understood, that I do not intend to confine myself to the form of apparatus therein shown, as the same may be varied, without departing from the nature of my invention, and must depend upon circumstances and the ultimate object to be attained in separating the sulphur from the ore; I would merely observe, that I avail myself of that form of apparatus which appears to be best adapted to the circumstances affecting the reduction of various kinds of ores, and such as, in all cases, will admit of the utmost possible action of the steam upon the ore during the time it is undergoing the process of calcination or roasting.

When the object is to save the sulphur, vessels or retorts should be used admitting the passage of the steam through them, and so as to produce direct action upon the ore, but heated by fire from beneath, as shown in the accompanying drawing, which represents a longitudinal section of a retort A, into which the steam is admitted through the pipe B, and the vapour pass out through the pipe D. The retort may be charged or emptied by means of the door C; by which aperture the ore may also be stirred with a rake, or other instrument commonly used for that purpose; but where the object is merely to expel the sulphur for the purpose of obtaining the metal with which it is combined, as in the reduction of silver, copper, and other ores, the steam may be conveyed through the usual calcining furnace—the reverberatory form being preferred. The separation of the sulphur is more readily effected if the ore be occasionally stirred, so a fresh surface is exposed to the action of the steam.

In the common method of calcination a sub-sulphate is formed, which precludes the expulsion of the whole of the sulphur. This is obviated in my process, as in my experiments I have succeeded in completely separating the sulphur from the substances employed; and when operating upon iron pyrites from Cornwall, I have obtained from it a perfectly pure oxide of iron. As regards the collection of the sulphur, a certain portion is usually simply expelled, and may, therefore, be condensed in a chamber; that sulphur, however, which is separated in combination with hydrogen, may be advantageously treated in two ways:—

1. It may be at once burnt, or it may be collected in a suitable gas-meter and then burnt; the sulphurous acid thus obtained being converted into sulphuric acid by any of the existing processes.

2. The gas may be burnt in a limited portion of atmospheric air; the hydrogen, under these conditions, alone enters into combination with oxygen, while the sulphur is separated and condenses in a pure state.

I do not claim, as part of my invention, the roasting or calcining the ore by fire; nor do I claim the application of any particular form of apparatus to be used in my process, either for the generation of steam or the calcination of the ore, or for the collection of the sulphur; but I claim, as the invention secured to me by the hereinbefore in part recited letters patent, the direct application of the protoxide of hydrogen or water, which I prefer using in the form of steam, in the calcination or roasting of the ores of silver, copper, iron, zinc, and all other metals or mineral substances with which sulphur is combined, for the more complete separation of the sulphur from those metals or mineral substances, and the sulphurous vapours thereby obtained may be treated in any manner that may be considered most desirable.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Considerable spirit has, for some time, been evinced in the city of Cork, by the preparations for the thirteenth meeting of this scientific body, which will be the second meeting held in Ireland. The president is Lord Oxmantown, so well known in scientific circles for his skill in astronomy, and general scientific knowledge, and whose celebrated gigantic telescope, lately constructed, has spread his fame over Europe. The vice-presidents are the Earl of Listowel, Viscount Adare, and Sir William Hamilton (the president of the Irish Royal Academy, and Astronomer Royal), with Dr. Robinson (Dean of Armagh), well known as an astronomer and mathematician. The local secretaries are Prof. Sirwily, the Rev. J. Carson, Mr. W. Clear, and Mr. W. Kelleher. There appears to be not the slightest grounds for the fear that repeal agitation would thin the attendance, as all political and religious feeling seems to be merged in the one paramount object, of giving all parties congregated a pleasant and flattering reception; and every arrangement appears to have been judiciously made for keeping up the excitement.

The inquiry room is most conveniently situated in the Commercial Hall, on the South Mall, near the quay where the passengers disembark. The places of meeting of the various sections are as follow:—A, Mathematical and Physical Science; C, Geology and Physical Geography; D, Natural History; and G, Mechanical Science, at the Court-house, in Great George-street; B, Chemistry and Mineralogy, Royal Institution, Nelson-place; E, Medical Science, College-buildings; and F, Statistics, at the Chamber of Commerce. The meeting for the appointment of officers, and the transaction of preliminary business, was held on Wednesday last; the first general meeting on Thursday; the various sectional meetings continued until Tuesday next; and the concluding meeting will take place on Wednesday, the 22d, when the awards of money will be made, and the reasons explained.

The agricultural museum at the Corn Exchange is prepared for exhibition of philosophical apparatus, machinery, manufactures, models, &c. An exhibition of the pictures of native artists takes place at the Science of Arts, and the Cork Agricultural Society will hold their annual exhibition, on Thursday, the 24th inst. The only excursion is one fixed for the latter day, to explore the harbour and river estuary, and view the geological cities in the neighbourhood. The raising the charge from what was originally 1l. to 2l. in 1838, has always since militated, to a great degree, against any good which the society might effect, and this will, no doubt, be the case in Cork, more particularly against the attendance of local members. We shall give, as usual, an interesting and general summary of the whole of the proceedings.

PROCEEDINGS OF PUBLIC COMPANIES.

GREAT WESTERN RAILWAY.

The sixteenth half-yearly general meeting of the proprietors was held at the terminus, at Bristol, on Thursday, the 17th inst., Charles Russell, Esq., M.P., in the chair.—After the usual routine business, the Chairman stated that the purchase of the Cheltenham line had been completed, which would effect a saving of 4000*l.* per annum. After the completion of the line, which would cost about 200,000*l.*, and taking into consideration what would be received from the Bristol and Gloucester Company, this line would cost about 30,000*l.* per annum. He further stated, that application had been made to them to assist in the formation of the line from Exeter to Plymouth, by deputations from the various companies interested. The proportion which would fall on the Great Western Company was 150,000*l.*, or about 6000*l.* a-year, and it was considered that the extension of the traffic would render such outlay remunerative.—The report was read, which showed the half-year's income to have been 330,847*l.* 19*s.*; as compared with the first six months, the passenger receipts had somewhat diminished, but there had been an increase on goods' traffic of 5916*l.* 11*s.* 3*d.* The Bristol and Exeter line had been extended 20½ miles since June, 1842. The expenses of working the line have been decreased during the past half-year by 5339*l.* The total sum available was 82,826*l.* 6*s.* 9*d.*, out of which the directors recommended a dividend of 2½ per cent. for the half-year. A portion of the permanent way between London and Maidenhead had been re-constructed at a cost of 17,783*l.* 7*s.* 11*d.* The report concluded by calling attention to the plan of a line to Plymouth, as mentioned by the chairman.—The meeting was then made special, for the purpose of giving authority for the purchase of the Oxford Railway, and to exercise the powers conferred on a company by 6 Vic., cap. 10, for making a railway from the Great Western line, at Didcot, to Oxford, as detailed in the report.—The report and accounts having been unanimously received and adopted, Mr. Hall moved a vote of thanks to the chairman, which was carried by acclamation, and the meeting separated.

LONDON AND GREENWICH RAILWAY COMPANY.

On Tuesday, an adjourned meeting of this company was held at the London Tavern, to receive the report of the committee of inquiry.—The chair was taken by J. Wilson, Esq., who having apologized for the absence of several of the directors, Mr. Money (chairman of the committee) stated the result of the inquiry. He said, that with regard to their own line, they had made such inquiry and propositions as would, no doubt, tend to develope the traffic and promote the interest of the proprietary. They had suggested that there should be three different classes of carriages—the first to be at the fare of 8*d.*, the second at 6*d.*, and the third at 4*d.*; the latter of which was reckoned to be of great importance to the public accommodation. They also recommended for the first class carriages annual tickets at 11 guineas, and second class at 10 guineas. With regard to daily tickets, they would fix them at 1*s.* for the first class, and 10*d.* for the second. There was a subject connected with the third class carriages which had occupied their attention; it was some substitute for seats, which would take up too much room, in place of which they recommended rails at convenient distances, for people to lean against. In respect to the other companies, they hoped to conclude some arrangement which would be beneficial and just to all parties. The Croydon Company seemed to think, that all they could show they made over their own line they were entitled to; and the same with respect to the Brighton Company. The South-Eastern, also, seemed disposed to allow them the full benefits of the mileage principle. The Brighton Company were not inclined to give up the arrangement they had already made; but he hoped they might still be brought to admit that it was the best principle. That was the position in which they stood; but, if they would permit an adjournment for about ten days, he had no doubt they would be able to come forward with something more matured on the part of those companies.—Mr. Williams read the report, which was nearly similar to the chairman's speech.—It was moved by the Chairman, and seconded by Mr. Jones, that the report be received, and entered on the minutes—which was carried unanimously.

After some observations from Mr. Kettering, Mr. Hill, Mr. Cocsey, and the Chairman—Mr. Hichens proposed that Mr. Eatwistle should be added to the committee, which was objected to by Mr. W. A. Wilkinson (the chairman of the Croydon Company), and, after some discussion, the motion was negatived.—Mr. M'Laurin made some observations on the plan of the committee, which, he said, after all, was merely offering them 12 per cent. to deal with, and, in that case, he thought there should be some addition to the committee.—After some further discussion, Mr. Hichens proposed a vote of thanks to the chairman, which was seconded by Mr. Scrivener, and passed unanimously.—The meeting then adjourned for ten days, when a further report will be presented.

PACIFIC STEAM NAVIGATION COMPANY.

The first annual meeting of the shareholders in this company was held on Friday, the 19th inst., at the offices, in Austinfriars.—The chair was taken by George Brown, Esq., who apologized for the extreme length of the report, and, after some other observations, requested Mr. Taggart (the secretary) to read it to the meeting.

From this document, it appeared that the operations of the company had been so greatly impeded, through the Panama coal taking fire, and the loss of vessels with this mineral, and the steamers *Peru* and *Chili* being laid up for want of fuel, that the total loss on the trading operations of the company since 1841 amounted to 13,600*l.*, and that about 20,000*l.* additional capital would be requisite, to build another steamer, and for other purposes, which would insure, in the opinion of the board, a successful result for the future. This would make the total outlay 111,640*l.* A great advantage was expected from the discovery of coal mines at Talcahuano, for the supply of the steamvessels. The cash in hand was 2100*l.*

Mr. Brookes wished to know if they were going to raise this additional capital, and on what terms it would be raised?—The Chairman said the terms were not sufficiently matured to enable him to answer the question at present.

Mr. H. De Castro gave the directors great credit for the best endeavours to promote the interests of the company, but regretted they had not called the proprietors together before, even if it had been to communicate their losses—as some resolutions might have been agreed to by the meeting. He also doubted very much of the realisation of the prospects held out in the report, of 14½ per cent., and also of the utility of spending the large sum required for another steamer, as he thought there would not be sufficient trade or freight for three steamers. Still, under the circumstances in which they were placed, he would move the adoption of the report.—John Abel Smith, Esq., M.P., begged leave to second the motion, and would observe, in reply to Mr. De Castro, that, in building a third steamer, they were not disposed to look so much to the profit it would realise, as to its necessity, in order to supply the place of either of the other two, in case of their being laid up from accident. He thought the trade of South America would be greatly accommodated by the addition of another steamer; and, as he was sure the directors had only the prosperity of the company in view in that recommendation, he would second the motion.

Mr. Tyrer thought it inadvisable any longer to continue the company, as there was not a prospect of going on to advantage. He stated that by not having contracted with Mr. Wilson, of Liverpool, for the steamers, they had incurred a loss of 12,000*l.*; and from the loss by the coals taking fire, and other causes, they had absolutely thrown away between 20,000*l.* and 40,000*l.*—The Chairman, in reply, said that in 1841 they had not a particle of information to communicate, and what was the utility of calling a meeting. From the calculation (which had been made from the actual expenditure of the company), it appeared that the charges for the future would be about 20,000*l.*, and that the average earnings of the two steamers would be about 40,224,*l.*, which would give an average profit of about 14½ per cent. In respect to the steamers, they could not be contracted for in time by Mr. Wilson, which was the reason of their being contracted for in London.—After some observations from Mr. Brookes, Mr. Tyrer, and other proprietors, an amendment was proposed by Mr. Armytrodd, for winding up the affairs of the company.

Mr. Pearce (the company's solicitor) said no motion of the kind could be entertained, except at a special meeting for the purpose; when the motion was withdrawn, and the report was adopted unanimously.—Mr. Templeman and Mr. Murray were then re-elected directors, and Mr. Dixon an auditor, without opposition.—In answer to a proprietor, the Chairman said that the shareholders were only liable for the amount of their 50*l.* shares by the terms of their charter. In respect to the amendment, if it had been carried, the consequences would have been most disastrous to themselves, more particularly now as they had overcome difficulties, and were in the way to work profitably for the shareholders.—After some observations from Mr. De Castro and others, the meeting separated.

British Iron Company's Bill.—In the House of Lords, last night, on the motion of the Earl of Shaftesbury, the standing orders were suspended, so far as related to the British Iron Company's bill, and the committee on the bill was ordered to meet on Monday, at eleven o'clock.

Clarence Railway.—We understand the directors have declared a dividend of 6 per cent. for the half-year, which is now in course of being paid to the shareholders in that undertaking.

On Fires in the Metropolis.—We understand the Government have a measure for next session, to be brought forward by the Earl of Lincoln, for the "protection of the public against the loss of life and property by fire." It is to be hoped that every fact connected with the working of the present system will be well ascertained before this is brought in, as it will show its paramount necessity. In relation to this subject, there is an important plan applicable for the purpose existing at this moment, due to the ingenuity of a Mr. John Kayne, who for a number of years has applied himself to the means of extinguishing fires subject and effect.

RAILWAY REFORM.

A work has just issued from the press under the above title, which professes to have for its object the impartial consideration of all the abuses under which the present system labours, and suggesting such alteration in all the details of working, fares, &c., as shall not only be advantageous to the public, but tend to the ultimate profit of the proprietors themselves. To use the words of the author, he proposes, first, "to institute an inquiry into the railway system, as it has been established, and is now carried on in this country;" and second, "to consider to what extent it could be modified, should it be found desirable, without injury to any party, and benefit to all." Having considered these two propositions, by pointing out the difference in the charges to the public, between the Belgium lines, wholly constructed by the Government, and those in this country, which are entirely the result of private enterprise (how far impartially we must leave to his readers to determine), he proceeds to the Select Committee of the House of Commons, of 1839, and enters into a consideration of two important points—viz., first, the financial position of railways; and, second, the power given to them by the legislature, and the probable exercise of this power for the general convenience of the public, and intercourse of the country, this he does evidently in a disposition opposed in toto, to the present practices of railways, and shows that though, in some few instances, as the Blackwall, Greenwich, &c., they have gained by a reduction of fares, the directors of the large lines evidently find it to their advantage to keep up their fares to the maximum point, although in nearly all cases, considerably under the amount allowed in the Acts of Parliament. He then enters upon a list of evils which he considers inherent in the system of monopoly existing, and some interesting useful tabular matter is given. He proposes, first, either to oblige the companies to adopt a uniform rateof fares, indemnifying them for any loss which might occur; secondly, for Government to agree to pay a certain fixed sum per annum; or thirdly, to purchase, at the current prices, all the railway property in the kingdom. Chimerical as either of these proposals may appear, taking into consideration the present extent of railway property in the kingdom, amounting to 63,000,000*l.*, the subject is handled with much confidence and considerable ingenuity, and the pamphlet closes with an appendix, which is a perfect description of all the railways of Great Britain and Ireland, sufficiently explicit to supply a deficiency long felt—viz., a popular description of the railways of the kingdom, and from which we now commence, and shall occasionally resume, as opportunity offers, what may be considered as a series of historical extracts:—

Arbroath and Forfar—15½ miles: There was here not a single public conveyance until this line was opened, and now from 300 to 400 passengers pass daily. On this line there are in all twenty-three bridges; the Act passed in May, 1836, and the line opened in 1839; the original capital was 70,000*l.*, subsequently increased to 100,000*l.*, and the line cost 136,000*l.* The traffic for the past year was 8200*l.*, and the first dividend of 2½ per cent. was declared at their meeting in June last.

Arbroath and Johnston—6 miles: The Act for this line passed in 1837, and it opened in 1831; the receipts for the past year were 4970*l.*, of which sum was the amount of carriage of 30,400 tons of coals.

Aylesbury—7 miles: This line joins the London and Birmingham at Tring, and is leased to that company for 2500*l.* per annum.

Ballochney—6 miles: This line is in direct communication with the Stanmanus Railway, with a branch to Monkland; it is in a district rich in minerals, and has traded in no small degree to develope the wealth of the country. The receipts for passengers in the half-year ended July 3, 1843, was only 320*l.*, the principal revenue being derived from coal, 916,000 tons having been conveyed in the above period.

Birmingham and Derby: This is an important line of forty-eight miles in extent, forming one of the main links between the metropolis and Yorkshire; the Act of Parliament was passed in May, 1836, and the line opened in 1839; the original capital was 630,000*l.*, afterwards increased to 1,056,666*l.*; this line has turned out a bad speculation, great opposition existing between the company and the Midland Counties Railway. The number of passengers in the half-year ending the 31st Dec., 1842, was 99,000.

Birmingham and Gloucester—53 miles: This Act passed in April, 1836, authorising a capital with loans of 1,360,000*l.*, afterwards raised to 1,441,666*l.* This line has not yet paid anything to the shareholders, and the number of passengers has decreased from 193,276 for the half-year ended 31st December, 1841, to 130,702 for the corresponding half-year of 1842.

Bishop Auckland and Weardale—9 miles: This railway branches off from the Stockton and Darlington, and, after crossing the Wear, it terminates at Waterhouse-road. There is one tunnel, and twenty-two bridges. It was constructed in 1838, and cost about 100,000*l.*; there are no passengers, and all the revenue is derived from the coal carried; the principal proprietors being those persons interested in the coal trade.

Bolton and Preston—13½ miles: There is no county in England (perhaps excepting Durham) that is so intersected with railways as Lancashire, not a mile can the passenger proceed but he may find a railway. This line is not finished to the Preston end, but there are ten miles opened to Chorley. When completed, this line will form a link in the great chain of railways, which will connect the north and south parts of the empire. For the year ending 30th June, 1843, the number of passengers carried was 60,300.

Bodmin and Wadebridge—10 miles: This line was begun in 1829, and finished in 1834. It commences at Wadebridge, close to the river Camel, runs parallel to the river as far as Wenteworth, from whence there is one branch to Bodmin, 1½ miles, and one to Ruthen, 1 mile. There is but little traffic, the Parliamentary duty for the last year having been only 13*l.* 8*s.* 11½*d.* This is the only public railway in Cornwall.

Bolton and Leigh—10 miles: The Act for this railway was obtained in 1825, and the total amount authorised to be raised was 160,000*l.* The traffic on this line has somewhat fallen off, the receipts in 1839 having been 6331*l.*, while for the year ending June, 1843, they were only 5226*l.*

IMPROVED MACHINE FOR THE COMPRESSION OF THE GASES, OR ATMOSPHERIC AIR.

We have received a communication from Mr. David A. R. Saunders, in reference to a notice of his condensing apparatus, which appeared in the Journal of the 5th inst., stating there are two or three small errors therein, and a misconception of the working principle. We endeavoured to give as correct a description as a mere statement, without a diagram, would allow; and it does appear to us that the general principle of the apparatus from that description may be easily understood. With respect to the application of condensed air as a secondary or intermediate application of steam or other power, much difference of opinion exists among scientific and practical men—some considering, that the circumstances under which the steam-engine is worked not being favourable to the economy of fuel, the blowing off at the safety valve often amounting to one-fourth of the generated steam, that the working power being applied at once to the work it has to accomplish renders it next to impossible to reserve it for use when required; hence, that the application of highly condensed air as an intermediate power produced by the steam, and which can be accumulated to any extent, and applied to the resistance to be overcome at any time, and in quantities proportioned to the work required to be done, a great saving of fuel can be effected. Others contend, that, under the present effective working of the steam-engine, the loss of power and fuel from the blowing off the steam and other causes is much less than it appears to be; and that, even were it not so, the extreme difficulty always attending the combining and managing highly condensed air, with the loss from leakage, and the great friction necessarily attendant thereon, and increased machinery, would more than counterbalance whatever economy or advantage might be obtained. Nothing, however, but actual practical results can ever be depended upon; and there is no doubt that, under peculiar circumstances, condensed air, as the secondary moving power, would be a great advantage. The subject is an intricate one; but we shall be happy to give insertion to any communications having for their object an elucidation of the theory.

Payne's Wood Patent.—Mr. Payne's process, for rendering substances thoroughly anti-dry-rot, was the subject of conversation in the House of Commons on Wednesday evening, when Mr. Berkeley inquired, whether it was the intention of the Government to take into consideration Mr. Payne's patent for the preservation of timber from dry-rot? He understood that it was an efficient preservative against insects, and it was unobjectionable.—Lord Lincoln said that he had, about twelve months since, been present at an examination of it, and his impression was, that it possessed the advantages the hon. member had stated; those things, however, were only proved by time. He would lay on the table of the House the report of Mr. Phillips, the chemist appointed by the Board of Works on the subject.

Bristol and Exeter Railway—Manslaughter against the Directors.—An adjourned inquest was held on the 19th inst., on the body of Richard Hall, who was drowned in consequence of his boat coming in contact with the Somerset Bridge erected over the river, for the formation of the line. The mustering, it was stated, had been left in a most dangerous condition, and occasioned the loss of several lives, and although notice had repeatedly been given to the directors, they took no steps to remove it.—After a careful examination of a number of witnesses, the jury returned a verdict of "manslaughter" against all the directors.—The coroner then adjourned till Tuesday, in order to have a proper inquisition prepared, when a host of attorneys appeared to arraign the verdict of the jury.—Mr. Traver appealed to the coroner on the illegality of this proceeding; a writ of certiorari was then delivered, to remove the inquisition into the Queen's Bench, whereby Mr. Morgan became bound, himself in 100*l.*, and two sureties in 250*l.* each, for the appearance of himself and brother directors on the 30th October next.

MINING LYRICS—THE BILSTON COLLIER.
[From the *Birmingham Advertiser*.]

Nay, don't despise the "Miner lad,"
Who burrows, like the mole,
Buried alive from morn to night,
To delve for household coal—
Nay, Miner-lad, we're thank for it,
Though black thy face be, as the pit!

As honourable the calling is
As that of lazy lords,
Then rise to the poor Miner lad
The ore that steels their swords—
And yours, too, as fierce as theirs
In dark and ills the Miner shares!

To parent of the goodly world,
In gold and silver dight,
Who, but the humble Miner-lad,
Your jewels brought to light?
Where would be your gold and silver,
But for yonder lowly delver?

Ye barons of pearly diadems,
Who sit on lofty thrones,
Smile gently on the Miner-lad
Who wrought your precious stones,
And rescued from their iron bond
The ruby and the diamond!

Ye instruments of brass, that pierce
The ear with trumpet sound,
Your notes, but for the Miner-lad,
Had slumbered under ground—
Nor hanged bronze, nor bronze gate,
That graced the trophies of the great!

Then don't refuse the Miner-lad
The crust of bread—his prayer!
Beneath that blackest face of his
He bears a heart as fair!
The toil of his bare brawny arms
Ah!—all our hearts and homes warms!

Bilston, August 11. Sorn.

THE GOLD MINES OF RUSSIA.—(*From a Correspondent.*)—Russia now yields four times as much gold as all the rest of Europe; and the yearly produce of this metal (600 poods, or 15,000 lbs.) is sufficient to load from forty to fifty sledges. The silver needs for its conveyance a caravan of from 120 to 150 sledges. The platina requires but three or four, and the copper, which is also conveyed chiefly by land, sets in motion 2000 sledges. By far the greater part of these metals comes to the mint in Petersburgh.

MAYENCE AND HOMBURG RAILWAY.—Since the passengers' train commenced running on this line the weekly number of passengers has been steadily on the increase; the return for the last week was upwards of 1000.

ELECTRO PLATING—ELKINGTON'S PATENT.—We have already stated that an action had been brought by the representatives in France of Mr. Elkington, the proprietor of a patent in this country, for the new process of gilding by immersion in a bath of gold and alkali, against MM. Simon, Ruolz, and others, for piracy; and that a cross action had been brought by those parties, with a view to having it declared that Mr. Elkington's patent was null and void, on the ground of the process being public property. The case having come before the Cour Royale, on an appeal of one of the parties from a judgment of the Tribunal of Commerce, a course of experiments was ordered; and, on Saturday, the court, after a full and detailed report of the operations, and ocular demonstration of the process, gave judgment in favour of the representatives of Mr. Elkington, by declaring that, although the gold and alkaline bath, as used by that gentleman, had long been known as a chemical discovery, he was the first person who had applied it to the gilding of metals, and, therefore, his patent was good. MM. Simon, Ruolz, and Co., were, therefore, declared to have no right to use the same process, and condemned to all the costs of the suit, which amount to 40,000f.—*Galignani.*

PUBLIC COMPANIES.

MEETINGS.

Preston and South Shields Railway	Offices, Guildhall-buildings	Aug. 21	12.
New Zealand Company	Broad-street-buildings	21	1.
Taff-Vale Railway Company	Cardiff Arms Hotel, Cardiff	22	11.
London and Blackwall Railway	London Tavern	22	1.
Edinburgh and Glasgow Railway	Offices, Glasgow	22	1.
Maryport and Carlisle Railway Co.	Aspatria	23	11.
Bristol and Exeter Railway	White Lion Hotel, Bristol	23	12.
Newcastle-upon-Tyne Marine Ass.	Newcastle	23	12.
West Durham Railway Company	George and Vulture	24	12.
Birmingham and Gloucester Railw.	Waterloo-street, Birmingham	24	12.
Eastern Counties Railway Co.	Station, Shoreditch	24	1.
Bristol and Gloucester Railway Co.	White Lion Hotel, Bristol	24	1.
London and Greenwich Railway	London Tavern	24	1.
Clarence Railway Company	George and Vulture	24	1.
Hungerford & Lambeth Susp. Bridge	9, Villiers-street, Strand	24	1.
Consolidated Tretoil Mining Co.	Offices, 6, Mildred's-court	24	1.
Hartlepool Dock and Railway Co.	Hartlepool	25	12.
Birmingham and Derby Railway	Lawley-street, Birmingham	25	12.
Cheltenham & Gt. Western Union	Station, Cirencester	25	1½.

CALLS.

Salisbury Railway Company	2½l. per share	As formerly	Aug. 19.

DIVIDENDS.

Clerical, Medical, and General Life Assurance Company	5 per cent.	Offices	Aug. 21.
Tincroft Mining Company	15s. per sh.	44, Finsbury-square	23.
Halifax and Huddersfield Bank	1l. per sh.	As formerly	26.
London & Birmingham Railway	5 per cent.	As formerly	—
Consolid. Copper Mines of Cobre	1l. per sh.	Offices, 26, Austinfriars	30.
London and Westminster Bank	3 per cent.	Bank, Lothbury	Sept. 11.

NOTICES TO CORRESPONDENTS.

The MINING JOURNAL *is regularly published about Two o'clock on Saturday afternoon, at the office, No. 26, FLEET-STREET, where it can always be obtained and there is no cause for irregularity in its supply, in town, other than neglect on the part of the agent through whom it is ordered; but, as respects its transmission to country subscribers, the blame is shared with the Post-office authorities.*

"A Subscriber."—The amount of ore for sale from Wheal Providence was stated in our last to be 260 tons, instead of 250—the error originated with the Ticketing Paper, and the necessary haste, from the late hour at which we received it, precluded its detection by us.

PRESENT STATE OF THE IRON TRADE.—Under the head of "Northumberland," in last week's *Journal*, an error occurred; in stating Messrs. Losh, Wilson, Bell, and Co. to have but one furnace, and that in blast—they have two furnaces (one in and one out), which, we are informed, they have had ever since the commencement of their works—forty years ago. The furnace of Messrs. Wylam, Thompson, and Co., has been out of blast about twelve months.

Received—"J. W. S." (Bishopwearmouth).—"A Constant Reader" (Brecon).

THE MINING JOURNAL,
Railway and Commercial Gazette.

LONDON, AUGUST 19, 1843.

We regret to have occasion to advert to the "strike" on the part of those employed in the copper smelting establishments at Swansea, as such must tend materially to injure the interests of the miner and mine adventurer, not to observe on the serious effect produced on the smelter. The consequence of a strike of this nature cannot be calculated upon, or any estimate made, by comparison with other manufactures, inasmuch that the system, as applied to the purchase of ores, is, in itself, altogether different from the general course observed in the purchase and sale of other articles of commerce. For instance, we may adduce the sales by ticketing in Cornwall and at Swansea—the former being weekly, and the latter alternate weeks; the amount being, on an average, 30,000*l.* to 35,000*l.* weekly. These sales are effected at a month's credit, on a month's bill being given at the expiration of such period—and, consequently, the smelter has to provide for the payment of the ores purchased, at a given time.

Let us, then, suppose that his smelting works are suspended—that he has no means of converting his ores into merchantable copper, and thus providing for their payment as the time comes round. We can very readily guess the consequences which must result. The smelter not requiring the ores, having an ample stock on hand, without any reduction going on, naturally says, in the absence of the manufacture and sale of cake or sheet copper, "I am no longer a buyer of the crude ore; my capital is, in a measure, locked up, and it is only under circumstances of a highly favourable nature that I will become a buyer." Let us, then, consider what are the favourable circumstances which shall induce him to become a purchaser, or to increase his stock of ore. The answer is most ready—reduction in price. Here, then, we find that the miner is the sufferer. The workmen employed by the smelters having struck for wages—or, rather, against the proposed reduction—the smelter at once says to the miner, who is dependent on the sales of ore for the means of prosecuting the mine, "I cannot take your ore unless at reduced rates, inasmuch that I have no means of rendering it available;" the miner is compelled to sell—the smelter gets an increased stock of ore at a depreciated price—and holds the miner thenceforth at arm's length. Another consideration—and, by no means, a slight one—is, that on every ton of ore, no matter whether the standard for 8 produce be at 140 or at 100, the charge of 2*l.* 15s. per ton for reducing charges is deducted from the price of the ore—so that it will be at once seen, ores at 140 standard, paying 2*l.* 15s., renders the charge upon the miner, with a reduced standard of 100, of upwards of 70s. This, in itself, is a matter of serious moment, and at once accounts, not only for the depreciated value of our mines in Cornwall, but the price quoted in our weekly Ticketing Papers.

It is right, however, that we should say a word or two upon the "strike" which thus so seriously affects the miner, in an indirect manner—for there can be no question but that the smelter, having the power in his own hands of controlling the market, as well as the price of ore, will take care that he does not sacrifice his interest for the benefit of others. One main objection—and to us it appears well grounded—on the part of the operative is, that, whether copper was 100*l.* or 110*l.* per ton, no advance was made to the working man; but because a decline takes place, attributable, in a great measure, to the smelters themselves, from the adoption of the new tariff, then a reduction is made in the wages. We consider such a course unjust, and—with the power possessed by the smelters, we should say—dishonest to their workmen; they have the means of giving them fair wages for their labour; and should they say they have not (on which we would raise issue)—we then say, the act which has reduced their profits—that of the operation of the new tariff—they have themselves to thank for. They thought to realise a large profit—let them then put up with the loss consequent upon their own acts, but let not the industrious workman be sacrificed for the advantage and benefit of the smelter, who, on the occasion of the legislative enactment, thought only of his own interests, and would willingly have even advanced the wages of the operative on his establishment at the cost of the home miner. To him, no matter from whence ores came, so that he made his profit. We shall, however, have occasion to discuss this matter at greater length, in presenting some statistical tables, applying to our produce, exports, and imports, of copper and tin, both as relates to ores and metals.

It was our intention to have entered at some length into the operation of the tariff, more especially as relates to our tin mines, which may be said to be ruined—and, indeed, it is questionable with us whether we shall have a tin mine working in Cornwall at twelve months from the present period, so destructive have been the effects of the Ministerial measures as regards this branch of our mining industry. We find that Banca tin can be purchased in our market at 56*l.* per ton; and when we compare that with the price which British tin obtained some eighteen months since, it requires not argument or further illustration to prove the injury done to the home miner, by the adoption of the measures on the part of Government. The endeavour on the part of SIR R. PEEL and his coadjutors to please all, reminds us of the fable of *The Old Man, his Son, and the Ass.* Its application is too ready to require one word further.

In referring to the tin mines, we are aware that they form a minor interest in the operations in Cornwall, and are of less importance (whether considered in a mining, smelting, or commercial point of view) than those of copper. As the latter interest, however great, has not felt directly so serious an injury as that inflicted on the tinners, although the price of copper and the standard have been considerably depreciated, we have been led to notice the tin mines in the first instance.

The serious effect which has been produced on the copper mines cannot, perhaps, be better illustrated than by selecting some of the principal mines of Cornwall, giving their returns, standard, price, and dividends—such we have in preparation, and hope to be ready next week, when we shall present it to our readers; indeed, it is only by statistical details that we can draw a fair comparison.

We last week briefly noticed the determination of the Committee appointed to inquire into the state of the laws respecting Joint-Stock Companies, of abandoning the investigation, *on account* of its importance, and leaving it to the consideration of the next session—whether such inquiry should be revived, or otherwise. The subjects brought under their notice, we should have thought, would, in their minds, have established such frauds, that, in common justice to the community at large, they could not have separated without making a report upon the evidence they had collected. It may be said, that they had not finished their labours; but, with the uncertainty of another committee being appointed—and, further, whether such committee would be composed of the same individuals—we feel that it was the bounden duty of the chairman and members of the committee to have reported to the House the result of their labours, and the opinions entertained by them on the subject, from the nature of the evidence advanced. It is true, that, in the course of their inquiry, they might have found that some schemes were not quite so bad as the Talacre, the West Cork, the Arigna, or the bubbles of WILLIAM MILLETT THOMAS; but, as we believe it is an admitted axiom that "two blacks will not make a white," and *vice versâ*, we cannot understand why the committee should not have reported upon those particular companies, of the "movements" of which they were in possession of ample evidence. If, indeed, it should be said that the evidence was not complete, then, we say, more culpable are they, to bring to an abrupt close an inquiry which—no matter at whatever stage it had been stopped—should have been perfect in itself. We complained, on a former occasion, that their proceedings were secret. We hate secrecy; it is unfair to all parties—even to the accused; for his repudiation of the charge—if such he can advance—is not given to the world. It may be said, the charge preferred is not publicly put forward by the committee, in their official capacity; but we would ask, is not the conduct of the parties, and their connection with the several schemes, sufficiently notorious, to render it highly desirable, that, if any doubt exist in favour of the accused party, he should have the benefit? We fear that no good result will issue from this inquiry; the members of the legislature—or at least a portion of them—are so mixed up with joint-stock companies, and are so much *indebted* to them—not only for interest but capital, as well as the close connection which exists as regards relatives and constituents—that we apprehend there is but little chance of even-handed justice being done, except it is through the medium of the press. The exposure of abuses will ever be our object, while the development of our mineral resources, and the advancement of our mining interests, are the bases on which the MINING JOURNAL grounds its claims for support.

RAILWAY REFORM.

[At the particular request of an old correspondent, we give publicity to the following report—regretting, however, that, from the late hour at which we received it, and the pre-occupation of our columns, we are unable to append those remarks we should have wished.]

A public meeting was held at the King's Arms, City, on Thursday, the 17th instant, for the purpose of considering the necessity of petitioning Parliament for railway reform.—The CHAIRMAN (J. Fairburn, Esq.), in opening the business, said this was a subject of very great importance—it was hardly possible to over-estimate it. Locomotion was one of the great necessaries of life; and nothing could be more absurd or more ruinous to the best interests of the nation, than the trusting of any monopoly to private irresponsible individuals, whose duty it was to promote the pecuniary interests of their constituents, however detrimental such a course might be to the public good. His attention was first drawn to the subject about a fortnight since, by a leading article in the *Spectator* newspaper, on a pamphlet entitled *Railway Reform*, and subsequently in the *Athenæum*, when a long and able article was devoted to the same subject, and the principles and details of Mr. Rowland Hill's scheme gone at length into. On one point he believed every person would agree—viz., that if the main object of this pamphlet could be carried into effect, and a uniform low tariff be substituted for the present high and fluctuating one, it would be of incalculable advantage to the nation—not confined to one particular class, but extended to every individual in the community. It costs, from here to Liverpool, by a first-class carriage, 3*l.*, and by the third-class carriage 1*l.* 7s. According to the proposed scheme, those fares would be reduced to about 18s. and 4s. 6d. On the Dublin and Kingstown Railway it appears that there is one class of passengers (according to the directors' last report) carried at the rate of half a farthing per mile, which, at that rate, from here to Liverpool would be only 2s. 3d. Can anything prove more clearly the unsoundness and absurdity of our present system? On one line 27s. is charged—on another, for the same distance, only 2s. 3d.! It would be impossible to follow the author of *Railway Reform* through the mass of documentary and statistical evidence he adduces in support of his views; but there was one point which it was necessary to advert to, and that was, the amount he proposed to pay to the present shareholders. He believed there was not a gentleman in the room but would join with him in scouting any proposition that would have the effect of injuring the shareholders to the amount of a single shilling. In the classification of railway property, the cost, value, receipts, expenditure, net profit, and other details, are put down separately, for each railway in the kingdom. I saw that the London and Blackwall cost 1,225,000*l.*, and it was valued at 542,000*l.*; the Greenwich cost 1,019,000*l.*, and was valued at 479,000*l.* The author had laid it down as a principle, that all unfortunate speculators in railways should receive a bonus, varying from 5 to 20 per cent., to make up for their losses—that is, so much over the market price of their shares. Now, with regard to these two railways, the maximum of that rate has been considerably exceeded—as we all know that the shares of those two companies in the market do not exceed one-fourth of their original cost. There was but one subject more to which he would allude before he sat down, as it seemed to him great misapprehension existed in regard to it. It is supposed by many parties that according to the proposed scheme the management of the railways must be intrusted to the direct care of the Government, or, at all events, to some authority emanating directly from it. That is a complete error—a consolidation of stock is absolutely necessary, but not a centralised management; this is noticed in the Appendix. What is wanted is, the guarantee of Government for the security of capital and dividend; that security makes 63*l.* equal to 100*l.* If a party invest 2000*l.* in railway, or any other fluctuating property, and the same amount on Government securities, we all know that the 63*l.* in the one case is, in public estimation, fully equal to the 100*l.* in the other—the difference between these two sums would amply make up the loss incurred by the reduced fares, and, therefore, the present system might still be carried on, allowing the directors of the different companies the same uncontrolled irresponsible power as heretofore, with the exception of adopting a low and uniform tariff. He would give his warmest support to a petition to Parliament on the subject.—Mr. WILKINSON, in a long and able speech, entered into the subject of abuses of the present system, and dwelt particularly on the treatment of the poorer classes, who travelled in the third-class trains.—Several other gentlemen addressed the meeting, and a petition to both Houses of Parliament, praying for railway reform, was agreed to.

ORIGINAL CORRESPONDENCE.

MINING IN SPAIN—No. IX.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Through the exertions of the Central Mining Junta of Carthagena, several new regulations have been agreed to and adopted by the new provincial Government of Murcia, tending to encourage and facilitate mining and smelting operations. As a reward for their distinguished and gratuitous services, in directing mining works, and their improvements in the reduction of ores, the Order of Isabel the Catholic has been conferred upon Don Nicolas de Toledano and Don Jose Maria Luque. The former was a member of the committee on coals, whose report appeared in my fifth letter; and he is also professional director of the San Bruno and Orcelitana smelting-works, established on the Sierra de Cartagena. The public are indebted to him for statistical details and reports on several mining localities, and also for the invention of a new furnace, combining economy with efficiency, one of which is established with great success at the San José works, belonging to Messrs. Romero. Senor Luque has equally endeared his name among his industrious countrymen, by his friendly assistance and advice; and, as public benefactors to their province, the Central Junta solicited a public testimonial of approbation and gratitude in their favour, which it has been a subject of general exultation that they should have obtained.

Agreeable to Art. 37 of the Mining Regulations of 1825, a district inspector was appointed, to reside at Lorca, fifty miles west of Carthagena; and, as his presence is necessary to obtain legal possession of a mine, and he has, besides, other important duties to perform in the mining department, his residence at so great a distance gave rise to great inconvenience, expense, and delays. To remedy this evil, the Central Junta memorialised the new Government to have him removed to Carthagena, where his services were more wanted, which was done, in virtue of an ordinance dated July 20. They also requested that the convent of St. Philip, situated in the principal square of Carthagena, should be allotted to their use, for the establishment of a museum and schools connected with mining, which was also assented to. Among other useful institutions, the Central Junta have long been anxious to open a school for the scientific and practical instruction of mining captains; and the opportunity now presents itself.

In my letter No. IV., I alluded to the great inconvenience and extra charges incurred by smelters on the coast, in consequence of Carthagena being the only port of entry, which obliged them to send their fuel and other heavy articles overland, along bad roads; and I particularly mentioned the fruitless efforts of some parties interested to have the roadsteads of Porman and Escombreras opened for this special purpose. Through the perseverance of the Central Junta, all difficulties are now removed, an order having been issued allowing "ores, fuel, materials, and other effects, destined for smelting establishments, to be landed in the contiguous bays and roadsteads, under such precautions as the Treasury may deem it expedient to adopt, in order to obviate the frauds liable to be committed under the pretext of this grant." The articles so landed have, at the same time, been exonerated from the payment of the San Telmo, or light-house, dues. These I consider valuable concessions in favour of the smelting interest near Carthagena, and also extremely useful to British vessels supplying fuel—more particularly as some of our naval officers lately surveyed that part of the coast, the result of whose labours, it is to be hoped, the Admiralty will not withhold from the public. The amount of the stake which we have in that quarter, I have already noticed; and that stake, it is likely, will every week increase.

On the 25th of December, 1832, a royal order was issued, directing that the duty of *alcabala* should not, for a period of ten years, be levied "on the sales of mines, metalliferous beds, smelting-works, or offices." The term allowed having expired, and, considering that if this provision took effect in a general sense it would materially affect the Carthagenians, some of whose underground workings and smelting establishments are of a very recent date, the Central Junta memorialised that the duty should only be exacted from the date of the title-deed of the mine and the completion of the buildings destined for the reduction of the ores, in which they were most handsomely met by the new Government, by whom directions were to that effect given. It was further determined, that the dues payable by companies or individuals on taking possession of a mine, and fixing the bounds of a sett, should be reduced to 120 rials vellon (25s.). The surface dues on mines licensed, which on trial did not prove productive, have also been abolished, and the duty on ores smelted reduced from 5 to 2½ per cent.

In readily acceding to the wishes of the Central Junta, in the several enactments above recapitulated, the new Government of Murcia have evinced a patriotic and praiseworthy disposition to encourage and uphold a new branch of industry, which bids fair to restore that interesting province to its old condition of plenty and comfort, from which it had gradually sunk, in consequence of the many untoward circumstances which have befallen the Peninsula within the present century. I have already had occasion to remark, that the political conflict, in which certain classes of the Spanish population have for the last few months been engaged, has only in a very slight degree affected the Carthagenian miners and smelters; and it is now no more than common justice to add, that the conduct of the new Government (at the head of whom is Viscount de Huerta) has been so extremely conciliating and judicious, that, instead of losers, the industrious sons of Carthagena will be great gainers, by the late change. Now that the moment is so propitious, it is expected that other reforms and improvements in the mining system, suggested by experience, will be gradually introduced, which, although they may not operate beyond the province of Murcia, will give to the mining and smelting-works in that metalliferous region a new character, and help to develope the resources with which it abounds.

Under the head "Statistics," the *Telegrafo de la Mineria* continues to publish, twice every week, as many statements as its columns will allow of the various mining companies formed, briefly specifying the name and number of shares of each, the situation and locality, contiguity with others, distance from Carthagena, from the sea, and the nearest washing and smelting establishments, the state of the workings, nature and sales of the ore, names of the president and other functionaries, &c.—with the view of afterwards constructing a general return. The number published already exceeds 200; but, as there is not room for more than from fifteen to twenty per week, and it is expected that the total will reach beyond 400, some time must elapse before the list can be completed. To reproduce any of these multitudinous statements, would only perplex and confuse the English reader; but, as the subject is curious, and a most imperfect idea, besides, prevails in this country regarding the progress made in mining by the Carthagenians, I shall select an illustrative paper, which will afford more information than any descriptive details I could offer. It is the "Report of M. Louis Voulland (a French civil engineer), on the best mode of working the Alianza, Consolacion, and Jardinera mines, situated at the Cabezo de la Cruz Grande, part of the Sierra de Cartagena." It is as follows:—

The commencement of these mines may be traced to the Carthaginians or the Romans. Their workings, however, did not extend to any great depth, either horizontally or vertically. If we may judge from appearances, the hardness of the metallised covering greatly prevented their progress, as they were under the necessity of pursuing their excavations by the aid only of the pickaxe, wedge, and fire; and, as this mountain is in every part strongly metallised, the ancients preferably directed their labours to those localities where the ground was softer and could be more easily cut. Hence, their workings in this quarter may to this day be distinguished around the mines above named, more particularly among minerals of oxidised iron, in which they followed the course of some of its veins of galena, good in quality, and sufficiently argentiferous, like that which is at present found in the Jardinera mine, and the contiguous one called Lealtad Segunda, bordering on the Jardinera sett.—The metallised bed or mass extending within the Consolacion, Alianza, and Jardinera setts, I have ascertained, runs from north to south to the length of 200 varas (Spanish yards), and about the same in width from east to west, where it meets the shaft called [illegible], belonging to the company of "Mas vale tarde que nunca." By view of the ground enabled me to discover that the inclination ranges from north to south, with a fall of about 30°, and that the bed occupies a space equal to [illegible] square varas. The extractions up to the present day may be thus approximately estimated—viz.: Consolacion [illegible], Alianza [illegible], and Jardinera [illegible]—total, [illegible] square varas. There, consequently, remain to be extracted 42,780 varas of ore, known to be sulphuret of lead, associated with zinc, quartz, and argillaceous schist.—The thickness of the mass varies in its course, according to the points where the roof or the floor forms an undulation, but the average rate may be taken at two varas, although in the San Luis shaft, belonging to the Jardinera, the thickness equals five varas, and in the Alianza three. With these data (certainly established without the slightest exaggeration), let us proceed to ascertain what may be the value of these mines, and to what extent their produce can be carried, by subjecting the ores to that mechanical preparation which they require in order to be rendered fit for metallurgical operations.

I have already stated that the metalliferous bed still occupies a surface equal to 42,780 square varas, and averages two in thickness—thus leaving 85,560 cubic varas to be extracted. The ore enclosed in this bed, it has been proved by various assays, contains at least one-fourth part of the sulphuret of lead (galena), when divested of its gangue, the rest being zinc, quartz, and argillaceous earth. Its richness in lead before the gangue is removed is from 20 to 30 per cent., and divested of it the yield is as much as 50 per cent., while the produce in silver is equivalent to 3½ oz. per quintal of lead. The number of cubic varas having been set down at 85,560, and, taking only the fourth part, the contents would be equal to 21,390 cubic varas of pure galena, yielding 50 per cent. of lead. The specific weight of the cubic vara of this ore is from 83 to 85 quintals, and, taking the medium of 84, and by that sum multiplying the remaining 21,390 varas, the result would be 1,796,760 quintals, yielding, on the lowest calculation, 50 per cent. of metallic lead. Of that quantity, the net produce would be 898,380 quintals, which, at 60 rials, would realise 53,902,800 rials vellon; and, calculating the worth of the silver at 23 rials per oz., and the quantity contained in each quintal of lead being on an average 3 oz. 8 drs., the produce would be 72,319,590 rials—and the total of lead and silver 126,222,390 rs.

I will now present an estimate of the expense of the mine workings and mechanical preparation of the ores:—The cost of labour in the Alianza mine, including the expenses of gunpowder, implements, and the raising of the ores to grass, is estimated at 80 rials for each cubic vara—

	rials.
Multiplying 85,560 cubic varas by 80	6,844,800
Expenses of bruising, picking, washing, and preparing 1,796,760 quintals, at 20 rials each	35,935,200
Total expenses, except administration and dues	42,780,000

Thus leaving the net sum of 83,442,390 rials.

In order to obtain these results, it is indispensably necessary that the associations, to whom the mines above mentioned belong, should join among themselves in the construction of a washery, or contract with some party having a suitable establishment of their own. The only mine worked by the company of Verdaderos Hermanos (the Bella Dulcinea), which belongs to the Carmen de Alumbres division, and also that of the Providencia, or Cuatro Naciones, are both in a similar predicament; and I am of opinion that it would not be difficult to induce the proprietors of the two latter concerns to unite with those of the three mines previously mentioned in the construction of proper works for the dressing and preparation of the ores—an establishment so essential to their mutual interests. As far as I have been able to pursue my researches, the best point for the situation of a dressing and washing-house for the mines above named is in the neighbourhood of the Luisa mine, belonging to the company of Amigos de Seneca, near the rivulet flowing at the foot of the mountain. The water raised from the last named mine and the springs constantly falling into the rivulet are sufficient to supply the washing department, while a steam-engine of a 10-horse power might serve to move the triturating cylinders.

(Signed) LOUIS VOULLAND.

The preceding paper at once shows the system adopted in the mining operations carried on by the Carthagenians, and at the same time conveys a pretty correct idea of the capabilities of one locality, which may be taken as an average, although there are others the yield of which is still greater. The ore of the Eusebia mine, belonging to Messrs. Sorriano, of Madrid, yields 65 per cent. of lead, and 4½ oz. of silver per quintal. There are other instances, of 75 per cent. of lead, and a still larger proportion of silver. From the estimates in the paper above inserted, the working expenses may also be easily understood. From several other reports and published communications before me, it is evident that M. Voulland is an extremely active and intelligent engineer; and, from his having on several occasions been called in to give a professional opinion as to the best means of managing difficult enterprises, he must enjoy the entire confidence of the Carthagena people. His report on the Emilia mine is equally interesting, as is also that on the setts belonging to the company of Carmen de Alumbres, situated on the Cabezo del Pino, which are under his immediate direction. The geognostic part is particularly instructive; and on some future occasion I may, perhaps, give it you in an English dress.

Among the professional and useful foreigners who have flocked to the spot, as I have before remarked, are several Englishmen, who have found employment and protection; and it is pleasing to find that the most perfect harmony reigns among the various parties engaged in the same pursuit. An Englishman, named Nicholas Josse, has reported upon the Felicidad and other mines; he also directs the works of the Calpeana, Tres Amigos, Alianza Delfina, and Primera Estrella, mines. Messrs. Hope, Dunmore, and Charles Walsingham Turner, are among the Englishmen occupied in mining near Carthagena. There are a few Germans employed. A Biscayan company has also joined. I have already informed you that several of the smelting-works are carried on for account of Englishmen.

As you will have seen from M. Voulland's report, one of the greatest difficulties experienced is the want of wash-houses. Several are, however, completed, and others in the course of construction. One, belonging to Mr. Brunton, and situated at Porman, commenced working on the 31st of last May.

W. W.

London, August 15.

ON BOILERS AND FURNACES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I would willingly comply with the suggestions of your correspondent, Mr. James M. Scott, in last Journal, were it possible to convey by any one experiment the results of so many circumstances and conditions as are here involved, and all of which more or less influence those results. Were I to fill up the blanks in the proposed letter, it could only convey the results of one description of furnace, the evaporative effect of one description and size of boiler, the calorific value of one description of coal, and the efficiency of one mode of managing the fuel; whereas, each must be tested by its own class of experiments, if we would draw any *comparative results*. The letter, of which Mr. Scott suggests I should fill up the blanks, is as follows:—

SIR,—On the boiler I have constructed at Liverpool, which can be worked either with or without my patent, I have produced the following results:—Without the patent, I have evaporated lbs. water with tons of coal, in hours; with the patent, I have evaporated lbs. water with tons of coal, in hours.

[To be signed by] C. W. WILLIAMS.

I would here observe that your correspondent is misinformed as to my patent. I have not constructed any *boiler* with which I have experimented, and that with which I have operated is of a very defective kind. What I undertake by my patent is, to produce from any weight of coal, of any given kind, a greater quantity of heat than can be done by the ordinary mode of admitting the atmospheric air. Having satisfied myself on this head, I am now making a series of experiments on *boilers*, for the sake of improving their evaporative powers—a class of experiments hitherto wholly neglected. With respect to my patent, the results as to evaporative effect are necessarily as various as are the kinds of boilers employed; and producing an economy of from 5 to 50 per cent., according to their respective and varying circumstances and powers.

In making an experiment to satisfy the suggestions of Mr. Scott, it would be necessary that he should say—what description of coal is to be employed; what kind and size of boiler; what is the nature of the draught, good or bad; and whether he wishes the experiment to be made by the process of *quick* or *slow* combustion—that is, whether he wishes to know the largest quantity of water that the boiler to be used will evaporate, in any given time (say one hour), or, by any given weight of coal. Now, every one of these conditions vary the comparative results materially. It would, therefore, be manifestly erroneous to draw such comparative results from different fuels, furnaces, boilers, or modes of management.

As to the latter, for instance, by the process of *quick* combustion, and though with a very defective boiler, I evaporated 1715 lbs. of water in one hour, by 224 lbs. of inferior coal, which is 7·18 lbs. of water evaporated by each pound of coal. Again, with the process of *slow* combustion, though with the same boiler, coal, and management as to admitting air, I evaporated 1030 lbs. of water in one hour, by 112 lbs. of coal, which is 9·20 lbs. of water evaporated by each pound of the coal. In the first instance, also, the temperature of the surplus or waste heat was 1193°, and in the second it was but 975°. With this fact before me, I do not see how I could fill in the blanks as suggested by Mr. Scott; and, how could he draw any inference from such varying, though practically useful, results—each of the above experiments being *the best*, according to the wants of the manufacturer, and the demand of his engine for steam. If, for instance, the steam from 1030 lbs. of water per hour was sufficient for his engine, it is manifest that the latter process was the most economical, as he would then save the difference between 112 lbs. and 224 lbs. of coal (say, half his fuel); but, if his engine required per hour the steam from 1715 lbs. of water, then the *former* mode of managing his furnace was the better, since, though it cost more fuel, it provided the necessary supply of steam in the required time. Thus, in one case he economised his *fuel*—in the other, his *time*. Again, with respect to the use of my patent, compare the above experiment, in which 9·20 lbs. of water were evaporated by each pound of coal, with the following, when my patent was *not* employed, and the furnace managed on the ordinary plan—the coal and boiler being the same. When my patent was not employed, but 653 lbs. of water were evaporated within the hour, by 158 lbs. of coal, being but 4·12 lbs. of water for each pound of coal—against 9·20 lbs. of water when the patent was in action.

I herewith send you the table, with observations on a series of experiments on different kinds of fuel, prepared for the Select Committee of the House of Commons, now sitting, on the means of abating the smoke nuisance, and which will, in some respect, meet the suggestions of Mr. Scott.

August 15. C. W. WILLIAMS.

[We have been obliged, from want of space this week, to defer the insertion of Mr. Williams's [illegible] table of results until our next publication.]

NEW MODE OF TREATING SULPHUR ORES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the last numbers of your interesting Journal—viz., August 5 and 12—I find that there is a patent granted to Mr. Longmaid, of Plymouth, for a new mode of treating sulphur ores. According to the description given in the above Numbers, the process appears to be, the decomposition of the sulphurets by means of common salt, and the metals separated by filtration, precipitation, &c.

All silver ores treated by amalgamation are reduced by this method—*i. e.*, the sulphurets are mixed with a certain proportion of salt, and are exposed to a moderate heat in reverberatory furnaces; the salt and the sulphurets become decomposed; the resultant consists, generally, of sulphate of soda, oxide of iron, a soluble salt of copper, and chloride of silver. The decomposed mixture is put into barrels, with a certain quantity of water, quicksilver, and iron. The latter decomposes the water, by uniting with its oxygen; the hydrogen evolves, and unites with the chlorine of the silver, forming muriatic acid; the silver is thus precipitated in its metallic state, and combines with the quicksilver, and forms an amalgam, which is again distilled to obtain the silver. The other metals and salts which the mass may contain, being seldom of any value, are left in the residue, excepting the copper; this is precipitated with the silver, when iron is used as the precipitant.

I presume there must be something in Mr. Longmaid's mode of treatment, more than has been described in your Journal, to warrant a patent, as the decomposition of sulphurets by means of common salt has been employed in Europe and America from time immemorial. I hope, therefore, we shall be favoured with a more detailed description of the new process in your next Journal.

E. HOPKINS.

London, August 16.

[We cannot doubt but that Mr. Longmaid will readily avail himself of our columns to reply to our correspondent.]

OBSERVATIONS ON WHAT HAVE BEEN CALLED "ABNORMAL TIDES."

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I have seen in the *Report of the Twelfth Meeting of the British Association* (1842), a paper "On the Abnormal Tides of the Frith of Forth," by Mr. Scott Russell," wherein he has drawn the conclusion, that certain *double tides* in the Frith of Forth are the result of two tide waves—the one being the well-known regular tide, coming round the northern coast of Scotland from the Atlantic, and the other, as he states, being a continuation of the tide wave which comes up the English Channel.

I doubt the conclusion which has been drawn from these double tides, for it happens that the same description of tides are of frequent occurrence in some of the branches of Falmouth Harbour, where there can be no such cause as is assigned for them at the Frith of Forth. Simultaneous observations have been made at Falmouth and at the upper part of Restronguett Creek, in Falmouth Harbour; and while the tides have been regular at the former place, at the latter place they have been double—that is, at about three quarters of an hour before high-water; after having attained a certain elevation, the water receded for fifteen or sixteen minutes, and then again flowed until high water. Now, it appears from Mr. Russell's account, that, although the tides far up the Forth were double, they were not so at Leith—if I rightly understand what he means, when he says, "at Leith both tides meet;" so that it appears, that, whatever may cause these tidal motions, the effect is similar—that is, that far up the Frith of Forth, and far up the branches of Falmouth Harbour, there are double tides, although they may not occur nigher the ocean.

If the double tides at the Frith of Forth are caused by the two tide waves, as described, then I see no reason why the effect should not be seen at Leith as well as far up the Frith; for it is said that the English Channel tide wave arrives there at two hours before the regular tide wave; and, if the double tides should be owing to these two tide waves, then will their effects be seen in various places between the Frith of Forth and the Thames; and, of course, the two times of high-water in each tide will correspond with the arrival of the respective tide waves at any place. I have no doubt but that the British Association, through some of their members, may obtain gratuitous observations at many places along the Eastern coast of Great Britain, so as to set this question at rest—which I hope they will do, after having published the paper alluded to; and, at the same time, observations might be made in various estuaries, which, like the Frith of Forth and Falmouth Harbour, may, possibly, be found to have regular tides at or near their junction with the ocean—while far up the inlet the tides may be found to be irregular, and, probably, all from the same cause, which, I humbly beg to suggest, may happen from the different velocities that the stream of the tide current assumes at particular states of the tide, and may more or less be influenced by strong winds.

Falmouth August 14. R. THOMAS, C.E.

PLANS AND SECTIONS OF MINES.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—You were pleased to insert an introductory letter on this subject in the *Mining Journal* bearing date the 10th December, 1842, and, after a brief description of the several plans and sections of a mine, and what part of the workings are truly represented on each drawing, I engaged, in that letter, to furnish a further description of the horizontal or working plan in particular, together with my opinion as to the best method of construction. It is a well-known fact, that several mines in this kingdom are being worked without any plan or section whatever. There are others (and, I believe, many) that have plans, but, in consequence of neglecting to keep them up, so as to follow closely the underground operations, they are rendered almost, if not altogether, useless. The evils attendant on this random and reprehensible method of mining are well known and acknowledged by every competent mine agent, but, as many speculations are under the control of "directors," who have had no experience, it may be that this most essential matter has been omitted by their means, on the plea of "economy," so that, by rejecting the captain's opinion, they can satisfy the shareholders that "the board" has *done something!* Yes—by causing the mine to be worked without a plan and sections, they have, indeed, *done something*, better calculated to produce destruction than by almost any other course they might pursue expressly for that purpose.

I now proceed to redeem my pledge, by declaring to my professional and practical brethren my opinion as to the best method of constructing and keeping up a working plan. It may be inferred, that some twenty-five years' experience has brought me acquainted with all the methods in use, and, after a full investigation of the merits and demerits of every one of them, I have long found that constructing on meridional and equatorial lines is by far the most convenient and superior method. Practical men require but little explanation. Let your sheet of drawing paper be accurately divided into squares, on a scale convenient with the extent of the operations; five fathoms, or thirty feet to an inch, is a favourite scale for a working plan, if the operations are not very extensive. If this scale is adopted, and the side of the squares should be two inches, of course, they will each embrace an extent of ten fathoms in every cardinal direction. The lines should be drawn very fine, but quite distinct, and the levels, winzes, and shafts, represented by double lines and varied colours, to prevent confusion, and that every level may be clearly and readily traced by inspection, however irregular its course may be. It will be understood that the faint lines will always represent the cardinal points—or east, west, north, and south—and some of the advantages of constructing a working plan on these lines are as follow:—Every intersection of the squares presents a point for placing the centre of the protractor, while the radiation of the lines from that centre, at right angles, furnish the means for fixing this instrument in its true position, so that, at all times, whenever it is required to make any additions to the plan, we have always a point close at hand for laying down the protractor with the utmost certainty, and as these excellent instruments are now made with double limb and vernier scale, the angles may be pointed off with precision to two minutes, or the thirtieth part of a degree—an accuracy which cannot be attained by the improper method of drawing large fixed circles on the plan, or by any other contrivance. Another valuable effect of these lines is, that we can, at any time, readily discover by them the true bearing of the lode, or of any part that has been driven on. For instance, suppose it was required to find the bearing of the lode at any level where thirty drafts had been made, differing in length and direction, but inclining easterly, by a parallel of the adjoining lines, we find that the whole latitude and longitude, or the easting, measures (say) 754 feet, and southing 120 feet. By applying the protractor, scale of chords, or by computation, the average bearing will be found 9[illegible]° south of east. It may be further observed, that a plan constructed on this principle may easily be proved by trigonometry or computation; moreover, the whole length of every level, and the departures

to the right or left, may at any time be known almost at a glance. The great and numerous uses of the working plan can only be thoroughly understood by practical men, but we may observe, that when winzes are to be sunk and rose against, cross-cuts driven with counter drivings, shafts pitched, and the point required for rising against them, or any other important operation, the working plan, mathematically proved, furnishes a complete and immediate means of ascertaining with certainty everything required. But the advantages of readily detecting the common error of driving on the wrong branch of a lode that has split or divided, probably stands paramount over every other benefit, but it is obvious that, if the plan is not kept up closely, considerable erroneous drivings may be made and detected, when too late to prevent spoliation, and the loss of time and money. Finally, this plan contains all data (except depth) for constructing both the longitudinal and transverse sections.

I would respectfully invite the attention of your correspondents to this momentous branch of mining, and possibly some who have the interest of mining at heart, and whose experience has qualified them for forming a true judgment, will feel disposed to follow up the subject, and enlarge, confirm, contradict, or approve, as they think fit, only that a fair and full investigation may take place, so that the truth may be exemplified, and thereby beneficial results accrue to adventurers, and more credit and satisfaction to those who have the important charge of conducting mining operations.
JOHN BUDGE.

Callington, August 12.

[*We are glad to find that our correspondent, after eight months' reflection, has again applied himself to the question, which we believe him well to understand.—We trust he will follow up the subject.*]

WEST WHEAL JEWEL MINING ASSOCIATION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—A letter having appeared in your last week's paper, in reference to this mine, signed "A Commercial," in which it is insinuated that a call is in contemplation, I am desired by the directors to state, for the information of those shareholders who may be in ignorance of the real position of the mine, that there is *not the slightest foundation for such an assertion—the prospects of the mine being now equally as favourable as at any former period.* But for this unwarrantable assertion, the directors would have treated with contempt any allegation emanating from that quarter—believing the writer to be a discharged servant of the company, whose only motive, therefore, in fabricating such a statement, must be to gratify disappointment and malice. I am desired to state, in conclusion, that every information will be readily afforded to any shareholder, on application at the office; but no anonymous correspondent will hereafter be noticed.
ROWLAND NICHOLSON, Secretary.

23, Threadneedle-street, August 16.

[We most cheerfully insert the letter of Mr. Nicholson, and glad are we to find that the apprehensions of "A Commercial" were without ground. Although our correspondent is known to us, we are free to admit, that a declaration such as that conveyed in his letter should have been looked upon with more care. We avail ourselves of the letter of Mr. Nicholson, to satisfy those interested that "A Commercial" overstepped the mark, and that whatever his apprehensions might be, we feel satisfied he will agree with us, that he ought not to have conveyed them in the terms he did, without more satisfactory grounds.]

WEST WHEAL JEWEL MINING ASSOCIATION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—My attention has been directed to a letter, which appeared in your Journal of last week, under the signature of "A Commercial," wherein the writer has asserted that which I find, upon inquiry, to be untrue—namely, "that a call on our pockets is actually in contemplation." As, however, your correspondent seems desirous of giving his co-adventurers information, he will, perhaps, excuse us for suggesting to him the propriety, while on the spot, of ascertaining whether the balance due from the late purser has yet been liquidated? and of acquainting them of the result of his inquiry, through the medium of your valuable paper.

Cheapside, August 18. SCRUTATOR.

[We hardly think the above letter *fair*; and, indeed, we had our doubts whether we should give it insertion or otherwise. "Scrutator" wishes to imply that "A Commercial" and the purser are synonymous, or that there is a close connection. We can only say, we gave "A Commercial's" letter as matter worthy of inquiry. If "Scrutator" be right as to the purser, his application should be to the directors; they are the proper guardians of the purses of the adventurers.]

MINING REPORTS—BOLANOS MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—When we take up the *Mining Journal* to read the reports of mines—particularly foreign mines—expectation is disappointed if they are inaccurately given, and operations misled. From some cause, which, I dare say, you will inquire into, and prevent its occurrence in future, the report of the "Bolanos Mining Company," in your last week's *Journal*, might be justly called a *garbled account*. After the words "San Nicolas," in the fifth line, the original proceeds—" And when you reflect that the former mine was absolutely abandoned by the workmen on the old system of payment by the cargo, and is now producing from 500 to 700 cargas weekly, of 16 m.m. and upwards (after deducting the workmen's share), you will perceive that "—all this you omit.

Then, again, after "result," in the sixth line, the original proceeds—" I mention San Clemente particularly, because it produced nothing whatever before the partido was given; but in San Nicolas the effect is the same, although not so apparent, because the mine was in a productive state before"—this also you omit. Referring to the state of the tajworks, as continuing the same, in the original it follows—" Sometimes quite barren, but more frequently with ore. At present the west end of San Francisco level is very promising, a thin vein of rich ore having been met with, which may lead to better"—all of which is omitted, and which was the more necessary to have been inserted, as it is the very point referred to in the postscript, in which this thin vein is reported to be "increased to a foot in width—the quality being very superior."

Your report then proceeds—" The west end of San Fernando has been cut off by a fissure, which has crossed the lode "—omitting, after "San Fernando"—" Now in Molinacho, has also been in good ores up to this week." There are other omissions, or variations, which I need not revert to, particularly as, from your known desire to inform your readers correctly, what has been already stated, is quite sufficient to stimulate your inquiries in the proper quarter, and prevent the recurrence of erroneous reports. We look to your paper to have them accurately given.
OBSERVER.

London, August 13.

[It is always our wish and endeavour to give the mining reports, particularly those of foreign climes, to the fullest extent, as far as they appear really important to the shareholder and the public. There are, however, times when a verbatim copy would take up three or four columns, space which we could, by no means afford, and hence, we are obliged to give them in a condensed form. In this case, however, we must allow that the curtailment is injudicious, and as the reports from the Mexican mines are becoming of increasing importance and interest, we will take care that in future they shall appear as complete as possible.]

STATE OF THE IRON TRADE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—With a view to get your promised return of the make of iron as accurate as possible, I have to inform you, that one furnace has this morning "blown out" at Nantyglo—leaving in blast six. Beaufort has six in, and one out of, blast.
B.

Abergavenny, August 18.

[We are obliged to our correspondent, and only await similar favours before we give a complete table, with comparative results and observations.]

IMPROVEMENTS IN MINING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Were I desirous of a place, as it were, beside the people, for my designs and suggestions, my poor friends—&c., five young children, would urge me to a more vigorous course than pro bono publico. [illegible]

I was allured, some time ago, by the expression "prono bubblo," [illegible] from the lips of a fully grown personage of the county of Cornwall, which I took to be a legion [illegible], and allowed to go for the bono nocturn—"for the public's good;" but, from subsequent and better acquaintance with this gentleman, I now take it to be [illegible], which, although [illegible], I suspect to mean—No nobody's good but his own.

I beg to say to him, and of peers court, that I have something as to [illegible] the present working of whim ropes, capstan ropes, and chains [illegible] the duties brought up as often to be [illegible], and the falling kibble more effectually [illegible].

Taking leave of the above, I beg to speak of the mode of boring the rock in Cornwall, which seems to have arisen with the simple idea of getting out of the [illegible] but, [illegible] mechanical [illegible], I would have the [illegible] to the [illegible] combine hydraulic and pneumatic power, for the

purpose of boring the rock, thus relieving the miner of the heaviest part of his work.—Lastly, I have thought of various plans of mutual and prompt correspondence, in lieu of the present tardy and vague tokens observed, between the men at surface and underground.

Before publishing the one or the other of the above, I invoke the mining aristocracy to establish a fund for the expenses of trials, and to devise a means of securing to the projector 10*l.* for every instance wherein his plans be adopted.

Dudnance, August 7. PRO NO PUBLICO.

[We have only to observe, that our correspondent is far too vague in his communication. As to the "securing to the projector 10*l.* for every instance wherein his plans be adopted," we have only to say, "we wish he may get it;" but he must be somewhat more communicative first, and write more Cornish than Latin.]

PRESERVATIVES DURING STORMS AT SEA.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Please permit me to say that I have within these few days past read a long tirade about air-belts, air-tubes, and air-beds, being recommended for use in a storm at sea; I have been in a storm at sea, and I am quite astonished at editors of newspapers exposing themselves so grossly, by telling all who read their papers that they are entirely ignorant of plain common sense and natural principle, in so far as regards this matter at least. Do the writers of such articles not know, that it is a very different thing trying an experiment in a river inland, or upon the sea-shore in a calm, from that of experimenting it in a storm at sea? Do they not know that within these few years thousands of dead bodies have come on shore with their air-belts, and air-waistcoats too, even having several divisions in them around their bodies like ribbons, and having no air in them at all. And do they not know that if they were to make an air-bed as large as the Parliament House, having as many living human beings on it as it would float, that in a storm at sea, the force of the first heavy wave, driving it against any part of the vessel, or against a nail one or two inches projecting from a part of the wreck, or against a rock, they are instantly all dead men, and their vehicle a piece of airless cloth, or metal case. No! Do not allow the public mind to be deceived by such fairy tales, air-tubes, air-tanks, or air-beds, are, comparatively speaking, of no use whatever in storms at sea; for whether it be belts or waistcoats, or beds, which they mean to be efficiently useful in a stormy sea, they must not be composed of small or large portions of slenderly protected air. No! In order to their being efficiently useful in such a case, the true principle must be that picked and improved corkwood be made the buoyant power. I have thus considered it my duty, from motives of humanity, to put the public on their guard against such nonsensical and dreaming theories.

45, Fountain-street, Manchester, August 11. W. ANDREW.

LIFE-BOAT.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am sorry to say, that I am unable to comprehend Mr. Andrew's allusion to the life-boat, in your last Number. The application of cork as a lining to the interior of the life-boat belongs to the original constitution of the invention by Greathead, and I lay no claim to it. I only insist that air-boxes are an improper and a dangerous substitute for cork. What I do lay claim to, as original on my part, and my exclusive right, is, that provision whereby the centre of gravity is lowered, so as to correspond with the centre of the oscillation of the waves, so that the life-boat shall not capsize, but maintain invariably an upright position; also, the fringe of segments of cork surrounding the gunwale, which rise and fall in the very manner described by Mr. Andrew, models of which life-boat were presented to the Shipwreck Institution of Paris, and exhibited before the British Association, at their anniversary at Bristol. It is correctly figured in my pamphlet on the life-boat, published many years ago, and a copy of which, at his particular request, was given to Mr. Andrew. As far as the public are aware, Mr. Andrew has not brought before it the description of any life-boat of *his* invention. If so, I wish to be informed where I may find the descriptive details of such specific and individual invention—in the meantime, he has merely described an important part of my invention, and that too in the very language I have used!

August 15. J. MURRAY.

RAILWAY SIGNALS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the last week's *Journal*, a plan is proposed for giving signals at night from the guard to the engineman, to make him stop, when the train is at speed, in case of accidents. The plan proposed is, to place a reflector on the engine chimney, each guard having a lamp, which, when held up, will be reflected on the mirror on the engine chimney, and thus give the required signal to the engineman. It appears to me that a more effectual signal may be made, by means of a separate whistle attached to the boiler, for the guard, which may be opened and shut by a connecting wire, carried below or above the carriages, from the boiler to the guard-box. The engineman, and all others, would hear the whistle much sooner than they would see the reflected light.—*London, August 17.* H.

THE HYDRAULIC RAILWAY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—That scheme for railway propulsion, by means of hydraulic pressure, still hangs suspended in the balance—nothing is decided respecting it. If the inventor's statements are worth anything, it might form a fine subject for a public company. Such savings as he says it would effect, particularly with new lines of railway, should not be altogether overlooked, when immense amounts of British capital is going out to France and elsewhere. Will some of your well-informed correspondents try to set this scheme in the right light? Pens quiver, and reams of paper are written on every subject but this, and yet there seems to me no mystery about it. Let us know whether this invention is a fair subject for the investment of capital, or is not? Our trade is stagnant, and half of our labouring class are receiving pay from the Unions; let, then, some writer, who is not afraid of the subject, investigate and point out, for the good of the public, the merits or demerits of this scheme. I have yet seen no refutation of the arguments advanced in its favour by the patentee. This ought not to be. New inventions in the steam-engine, &c., can be immediately scrutinised; and yet here is an invention, promising to find employment for our starving labourers, and heavy orders for our half-ruined ironmasters, as well as excellent investment for dormant capital (if the inventor's allegations are anything near correct), and yet no one will open his mouth on the subject of it! The Plymouth line seems at last to be struggling into existence. Will some of the scientific and well-qualified gentlemen interested in its formation try to throw a little light on this system of hydraulic propulsion? Let them make it a local question, if they like, and leave us to apply it elsewhere—let them show how it might, or might not, be rendered applicable to their proposed line, and what would be its character, considered in a pecuniary sense, and as respects the capital to be advanced. In one word, let the pretensions of this invention, which I often hear mentioned, be thoroughly investigated, and the question settled at once. Why should your scientific or engineering correspondents be shy of it? It would be to their honour, if they either advanced it, or satisfactorily disposed of it as a failure, if that be its due.—*August 16.* A TRADESMAN.

UNION OF INVENTION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am happy to see some chance of an establishment being opened for the protection of the inventor, who has not the means in his own possession of securing the advantages attendant on the development of his own ingenuity. It is to be hoped this new society will become the inventor's friend. I have often been deceived by the conduct of parties who have professed to have the advancement of science, and the support of the ingenious, in view, while they have been carrying on a system of deception and robbery against their victims, ending in almost his ruin, and the enriching of themselves. These patent agents begin by holding out hopes which they know can never be realised, if they think the parties have the means of paying their fees without demur or difficulty; and, without such symptoms, they boldly condemn the invention as entirely useless to the public or the inventor. In the event of the invention holding out any inducement of success, the capitalist is introduced, who either offers to buy, or makes most honourable promises of assistance in carrying out the principles of the invention, and this he does sweet as honey to look upon, but deep as the teeth of the shark. If it be a joint-stock affair held up to you, everybody does the mischief, and no one bears the blame, but all get the cream of the invention, and the poor inventor must submit; or, even if he have some means, he is left to the glorious uncertainty of the law, which often ends in total ruin. I trust the first thing the new society does will be to petition against the present absurd and foolish prohibition against the very sinews of the country, whose inhabitants, blest with energy and inventive power, would, were they properly protected, cause trade and commerce to flow through various channels of the empire. Let the Government devote but one week to this, and they little dream of the stimulus they would give to trade in every department. That things must come to this, there cannot be a doubt, and happy shall I be to see the new company take up the matter with spirit and confidence, get the Government to go hand-in-hand with them, and the good they will do to the community at large is incalculable.
A POOR INVENTOR.

Dalmouth, August 15.

[That advantages are taken by patent agents, and that the interests of inventors are too oft sacrificed, as well as neglected, no question can exist—we have too many instances before us. The "Union of Invention" may do much to repair the evils which exist—but it requires "union," in the strictest sense of the application of the term. We shall be glad to report favourably upon their progress; for the present system, as well as the laws, are a disgrace to the country.]

H. W. Herschell has discovered that the mixing of nitrate of silver with hyposulphate of soda, both remarkably bitter substances, produces the sweetest substance known.

ON THE SMELTING OF IRON.

[In the Journal of the 1st inst. we published the particulars of a series of experiments upon cast and malleable iron, at the Milton Iron-Works, Yorkshire, by D. Mushet, C.E., and annexed is added the interesting discussion which followed the reading of the paper at the Institution of Civil Engineers.]

Mr. COTTAM remarked, that the paper would have been more satisfactory, if it had stated more particularly the progressive additions of the weights, the intervals of loading, and the length of the periods during which the bars remained loaded. He had found that when a beam was near the point of fracture, if the weights were added quickly, it would apparently bear more, than if a certain time was suffered to elapse between their application. His practice in experimenting was to make small additions of weight, at given intervals, which might be increased in length towards the point of fracture; more results were thus obtained.—Mr. LOWE believed, that in making iron, the main consideration after selecting good materials, was to proportion them according to the hygrometric state of the atmosphere. It was well known that better iron was made in frosty weather than in damp warm weather; and he was convinced that the more air was deprived of its moisture, the better would be the effect.—Mr. PARKES observed, that the experiments on the strength of the wrought-iron bars could scarcely be received as conclusive, as the power employed had been variable and ill-defined. If a given weight had been allowed to drop from a certain height, and the incisions in the bars had been made with precision by a machine, the power required to produce fracture could have been easily calculated, as regarded the impact.

Mr. FAREY observed, that, notwithstanding the difference between the results recorded in the paper and those arrived at by Messrs. Fairbairn and Hodgkinson, he was inclined to place confidence in them, on account of Mr. Mushet's known accuracy as an observer. He thought that the disrepute into which hot-blast iron had fallen was unmerited; that it was occasioned by want of care, and the use of inferior materials in the manufacture. He considered Mr. Neilson's invention a most important improvement in metallurgic operations; but it had been abused, because, by its means, ores which were formerly difficult of reduction, and therefore thrown aside, had since been economically fused, without due regard to their chemical constitution, and the metal produced was variable in quality, and sometimes deficient in strength. Nevertheless, Mr. Mushet's experiments showed, that, when proper care was exercised in the selection of the materials, and in the working of the furnace, the Milton hot-blast iron, when re-melted in the air-furnace, attained the high breaking weight of 610½ lbs., which was greater than that of the best specimens of cold-blast iron.—Mr. Farey then described at length the chemical combinations which occurred in the blast-furnace. The general result was, that the use of hot-blast accelerated the process of separating the oxygen from the ore, and of replacing it by carbon, rendering, also, the subsequent fusion more rapid and complete. A great advantage was obtained by avoiding the cooling effect, which was formerly produced by the introduction of a quantity of cold air under pressure: the point of fusion was higher up in the furnace, and the quality of the metal, when it fell into the hearth, was not injured by being blown upon—as it was protected by the covering of liquid slag, at a high temperature, which descended upon it. The deoxidation and absorption of carbon being facilitated, the metal contained a redundancy of carbon, notwithstanding a less quantity of fuel was consumed. It was probable, that the want of strength sometimes observed might arise from the imperfect amalgamation of the carbon with the metal; and this would account for the strength being increased by re-melting, particularly in the air-furnace, wherein the process was more gradual than in the cupola. This gradual process was not desirable for cold-blast iron, in which the carbon was already well distributed; therefore, in almost all foundries, the air-furnaces had been replaced by cupolas, as in the latter the iron was melted much more rapidly. When the use of hot-blast was first proposed, it was supposed that it could not answer—because, in all furnaces, better iron was generally made in the winter than in summer. This was a fallacy which ought not to have been entertained, as it was well known that the good working arose from the dryness of the air in winter, on which account the water regulators for the cold-blast were generally abandoned, and large dry reservoirs, with or without floating piston regulators, were erected in their stead.—Mr. FIELD corroborated Mr. Farey's statement, of the iron, when re-melted in air-furnace, becoming hard and brittle. He had, in consequence, abandoned their use, and made even the heaviest castings from cupolas. He attributed the deterioration of the iron to the slowness of the process of melting in the air-furnace. He had found the No. 1 hot-blast pig iron too rich and weak for general purposes; the No. 3 generally possessed the greatest strength.

In answer to a question put by Mr. Farey—Mr. RENNIE said, that, in his experiments, the transverse strength was 750 lbs.; and, when the bearings were three feet apart, the strength was 607 lbs., with specimens of good quality. He believed that, in some experiments on iron made with anthracite, published by Mr. Mushet in 1836, the cold-blast iron was shown to be from 16 to 27 per cent. stronger than that made by the hot-blast process. This might have arisen from peculiar circumstances, as Mr. Crane, of Ynisceedwyn, had shown him a pig of hot-blast iron which had resisted upwards of a hundred blows of a sledge hammer, while the ordinary cold-blast pigs were generally broken by about a dozen blows. From the discrepancy shown by the various experiments, he was inclined to think that the knowledge of the real effects of heated air, in reducing metallic ores, was at present very limited.

Mr. BRUNTON said that the only place where iron had been made with anthracite and cold-blast was at the Ystalyfera Works, South Wales; and the report by Mr. Mushet, which had been alluded to, was upon the iron made there. The black-band iron-stone had recently been found at the Beaufort Iron-Works, South Wales; and, as the furnaces were now blown with heated air, a large quantity of good soft iron was produced. That mine had been tried in the raw state; but the result had, he believed, been doubtful.—Mr. DAWSON submitted that the want of strength, which was complained of in the hot-blast iron, might, in some degree, arise from the use of raw coal instead of coke in the blast furnace, as the sulphur and other deleterious matters, which were formerly got rid of in the process of coking, were now introduced to the furnace, and probably combined with the iron.—Mr. VIGNOLES agreed with Mr. Lowe, that the hygrometric state of the atmosphere had much influence on the quality of the iron produced. It was found, in India, that, even with the rich hematite ores and charcoal, which were solely used by the native workers of metal, good iron could not be made when the air was charged with moisture, but that during the hot dry winds the best metal was produced.

Mr. CARDWELL said, that, during a recent visit to the Ystalyfera Iron-Works, he had tried some experiments on the strength of the iron then being made. The bars were one inch square, placed upon bearings 4 ft. 6 in. apart, and were carefully and gradually weighted—the deflection being ascertained by an apparatus for the purpose:—No. 1 specimen, loaded with 560 lbs., deflected one inch and a half, and sprung back when unloaded, without any permanent set; the weights were replaced, and additions made up to 649 lbs., at which point it broke. No. 2 specimen, with 660 lbs., deflected one inch and a half; with 710 lbs. it deflected one inch and seven-eighths; and broke with 741 lbs. No. 3 specimen, with 579 lbs., deflected one inch and four-tenths; with 651 lbs., it deflected one inch and five-tenths; and broke with 774 lbs. At the Ynisceedwyn Works, where hot-blast and anthracite were used for smelting the ore, the pig iron exhibited greater strength than any Scotch iron that he had ever seen. It appeared to him, that, in the Scotch iron-works, the object was, to produce a large quantity of metal, without due regard to its quality.

Mr. PARKES remarked, with reference to the experiments upon wrought-iron, that the test by blows of a hammer was not sufficiently substantive to be received as authority for the actual strength of iron; it frequently occurred in practice, that bar iron, which, when tried by breaking on an anvil, exhibited brittleness, after being forged by a smith, had proved tough and good. Neither did he conceive that the capability of a beam to sustain a given weight suspended from its centre was a proof of its fitness for resisting impact, torsion, and other strains to which machinery was subjected. On these grounds, he did not receive the experiments either of Mr. Fairbairn or Mr. Mushet as satisfactory, or as true indications of the ultimate strength of the iron. A mode of testing should be introduced, which would show, whether the improvements in making iron affected the quality of the metal produced, or whether they were restricted to changes in the method of manufacturing.—Mr. FAREY remarked, that, in Mr. Fairbairn's experiments, the deflection had been carefully noted, and the power of resisting impact had been calculated by multiplying the breaking weight to produce fracture by the ultimate deflection at the [illegible]

Mr. MAY regretted that upon a subject of such importance as the manufacture of cast iron and its capabilities, so little positive information was recorded. The field [illegible] [illegible]

[illegible]

Mr. [illegible] [illegible] from the Carron Foundry was [illegible]

which the iron employed was selected and mixed. A simple method was in use there for ascertaining the comparative strength of different qualities of iron, and had been found perfectly satisfactory for practical purposes. A wrought-iron bar, one inch square, was bent into a doubly indented serpentine or zig-zag figure, having three or four bends, each end of the bar terminating in an eye; this was used as a pattern, from which several serpentines were cast at each running of the blast-furnace; they were suspended by the upper eye—and, a scale being attached to the lower one, weights were gradually added until the castings broke. Such a figure was fractured with very little weight, and the method did not afford any test of the actual strength of the metal; but it was simple, and, as the foundry-men could conduct the experiment, it enabled a correct opinion to be formed of the comparative strength of the different kinds of iron under trial, and to make the necessary mixture. The system was used in his foundry whenever new kinds of iron were purchased, and he obtained good results from it.

SMELTING OF IRON—NEILSON'S PATENT.

Aware, as most of our scientific readers, no doubt, are, of the usual processes of producing iron from the crude ore, the Dean of Faculty, in his opening speech, on the important case of "Neilson *v.* Baird and others," tried in Scotland, from the 10th to the 20th of May last (and fully noticed by us on several occasions), gave the details of the improvements in the art of smelting in Scotland in so lucid a manner, that we are induced to extract the principal points, and which will be read with interest—in doing which, it must be understood, we adopt his language, which, of course, cannot be considered as of a technical or practical nature. Those acquainted with the iron trade—or, rather, that of the ironmaster—will not fail to detect some errors. We, however, confine ourselves to the text before us:—For the common purposes of smelting iron ore, blast-furnaces are employed; these furnaces vary in size, from twelve to fifteen feet wide at the boshes, and forty to fifty in height, open at top, and having also an opening near the bottom, for the melted liquid to flow out, and another for the slag, scoria, or glass, which, being lighter, floats at the top of the melted metal, and escapes through the furnace. The ore previously calcined, a limestone for a flux, and the fuel, which consisted of carbonised coal, were then placed in at the top of the furnace, and kept alternately thrown in, and filling up the furnace, as the smelting process goes on; the hearth was generally filled with melted metal once in twenty-four hours, and then run into the moulds, and formed "pigs of iron." To keep up the heat necessary, a powerful blast was required; the bellows were worked by great steam or water power, and, as it was supposed by scientific men that the colder the air the greater the make, and the better the quality of the iron, it was the fixed opinion that iron was produced better in winter than in summer, and such was the general process and opinions held in Scotland up to 1828. So general was this opinion, that some manufacturers even iced the air before it was admitted to the furnace—of course, only on a small scale, by way of experiment. By this process, coke could alone be used, and the coal, in coking, losing 50 to 55 per cent. of its heat-producing powers, made it an expensive mode of obtaining the metal, compared with that now employed. In this state of the science, it occurred to Mr. Neilson, that if the air was artificially heated to a *very high* temperature, the power of the blast on the ignited materials would be greatly increased; this notion has produced a change which has materially improved the make of iron, reduced the quantity of fuel one-half (as coal can now be used instead of coke), and has also reduced the quantity of flux to one-third—the quantity formerly required—giving a better command of the furnace, and a superior quality of iron, while the yield of one furnace is by this means equal to two formerly, the metal being drawn off every twelve hours. Mr. Neilson confines himself to no particular form of vessel, so that it be placed between the blowing apparatus and furnace, and the air heated to the temperature of melted lead, or 600° Fahrenheit, before it is injected on the burning mass; the heat being so intense, the nozzle of the tuyere would be quickly burnt away, and, to avoid this, a spiral pipe passes round it, through which plays a stream of water, which thus protects the tuyeres from the intensity of the blast. The effect of Neilson's hot-blast process, may be inferred from the fact, that the make in Scotland alone increased from 60,000 tons, in 1828, to 300,000 tons a-year at the present time—most of the ironmasters, not only in Scotland, but England and Wales, taking licenses from Mr. Neilson for its use.

Several of the witnesses, from various iron-works in the kingdom, described apparatus for heating air before passing into the furnace, but which generally appear to have been only experiments, and to have been soon abandoned. Some appear to have been ranges of pipes, with quick turns at the ends, and running parallel to each other, made to pass round inside the furnace, and, coming outside, entered the tuyere. Another mentioned was the upright cylinder, placed between the blowing apparatus and the furnace, and with some other modifications of each of them; but, from the general evidence given, it was plain they were only applied to small cupola furnaces, for the purposes of trying their effect, but, from their imperfect construction, and the rapidity with which they were destroyed by the heat, were abandoned soon after their individual formation. Nothing of the hot air principle, as patented by Mr. Neilson, or anything like its extent, could be shown ever to have existed.

From the great importance of this trial, we are induced to give some of the observations of a few of the principal witnesses.—Among these was Mr. Mushet, who stated, "that it was a very material improvement—one of the most novel and beneficial known in his time, and created quite a sensation all over Europe, besides what it did at home; it ran contrary to all opinions, notions, and experience; and that the saving of coal where the black-band was used, was equal to 6½ tons to a ton of iron."—Dr. A. Fyfe, chemical lecturer, of Glasgow, stated, "that he considered that neither Stirling's, Chapman's, Sadler's, or Botfield's, patents are in any way anticipatory of Neilson's; and that any one passing heated air into a furnace, through any vessel heated between the blowing apparatus and the furnace was infringing, and, in fact, using, the patent."—Mr. George Buchanan, engineer, gave similar evidence.—Mr. William Fairbairn, of Manchester, was examined as to the properties of various irons, and stated, from the experiments he had been engaged in, the power of resisting a transverse strain, and the power to resist impact, were greatly in favour of hot blast, it being, in the latter case, 1226·3 to 1000 for cold-blast; and stated, as an engineer, that if he wanted strong iron, he would take Scotch hot-blast No. 3.—As before stated, the evidence of the defendants went more to endeavour to prove a pre-existing practice of making iron by hot-blast, than to show that hot-blast iron was the weaker.—Some of the witnesses, in general evidence, said they had found hot-blast irons weaker, and would not use them; but, upon the whole, the evidence of the highly-scientific witnesses named was not in the slightest degree shaken, nor the statistics in Mr. Fairbairn's experiments contradicted.

Copper Mines in Cuba.—We have received some rich specimens of ore from Messrs. M'Cafferty and Co.'s mines, near San José, about twenty miles from the port of Neuvitas. We are informed that the vein of ore extends nearly to the surface of the ground; and, as far as it has been penetrated, it increases in thickness and in the richness of its quality. It has been opened at several points within the distance of about a quarter of a mile; and at the depth of thirty feet below the surface, it has been found to exceed ten feet in thickness. Within the year past there have been taken out some hundred tons of mineral, which has yielded, on an average, more than 30 per cent. of pure copper. The whole expense of delivering the ore in Liverpool and New York, including mining, transportation, commissions, &c., does not exceed $40 per ton; and when thus delivered, it will bring over $100 per ton, provided it yield 30 per cent. The Spanish Government is very liberal in protecting these mines, in admitting free of duties all provisions, implements, &c., which are imported for mining purposes.—*New York Morning Courier.*

Copper and Coal Works at Llanelly.—The public mind being unfortunately much agitated at the present time from the continued unhappy differences between masters and men in South Wales, all statistical details in connection with the real position of the several districts, must prove of general interest. The following information respecting the copper and coal works on which the town of Llanelly is dependent, is the result of recent inquiry.—There were formerly two copper-works at Llanelly, but there is now only one, the other having been closed for three or four years. The remaining one is still at work, the men having cheerfully consented to a reduction in the wages some time since; it employs about 300 persons, receiving a weekly amount of wages of about 200*l.* The quantity of copper made annually by these works is between 3000 and 4000 tons to smelt, in which upwards of 150 tons of coals are used daily; at the town of Llanelly, and within four miles round, there are five companies carrying on coal-works, employing about 1500 people, whose wages average about 16s. per week each; and I do not find that there is more than one truck-shop in this district, and that one of very small amount, the copper men and those at the other works being paid regularly in money.

Cornwall Railway.—A meeting of gentlemen was held at Andrew's Hotel, Redruth, yesterday week, "to receive a report from the gentlemen deputed to confer with the Plymouth board, and to consider the expediency of commencing a subscription for a Cornwall and Devon Railway, with a view to the formation of a company for accomplishing this object." There were present—E. W. W. Pendarves, Esq., M.P. (in the chair), J. T. Treffry, Esq., W. Reynolds, Esq., G. C. Fox, Esq., R. Fox, Esq., W. M. Tweedy, Esq., J. Vivian, Esq. (of Calstock), Rev. J. Trevenen, and other gentlemen.—After the reading of the correspondence with the Plymouth committee, it was resolved, that measures should at once be taken to canvass the different portions of the county; and subscriptions were immediately offered to the amount of 20,000*l.*, including 5000*l.* from Mr. Pendarves, and the like sum from Lady Bassett.—A provisional committee was appointed, for the purpose of making the necessary arrangements; and a deputation, consisting of Messrs. Wm. Tweedy and W. H. Bond, was appointed, to meet the directors of the Great Western Railway Company, at their half-yearly meeting at Bristol, to ascertain the amount and description of assistance which will be rendered by that company towards the formation of the Cornish line.—Thus far, we are rejoiced to see the Cornish Railway commenced in good earnest; and we hope in our next publication to be enabled to report still more encouraging progress.—*Falmouth Packet.*

STATE OF THE IRON TRADE.

Newport.—I am happy in being able to inform you that prospects are rapidly brightening in the great staple of this and the adjoining counties; indeed that, more than a prospect, an absolute rise of 5s. per ton on pig, and 10s. on bar-iron, *has taken place*, and with every reasonable probability of such rise being firmly maintained. I do not give this opinion of the probable stability of the iron market upon hypothesis or mere speculative data, but on good and substantial grounds, which have come to my knowledge from unquestionable *facts and figures.* * * * I have this morning seen the circulars of two great houses, announcing an advance, as before stated, of 5s. and 10s. per ton on pig and bar-iron respectively.—[Correspondent of *Morning Herald.*]

Monmouthshire.—We have had the pleasure officially to ascertain a fact which we announce with much satisfaction to our readers—viz., an *improvement in the state of the iron market.—Merlin.*

Merthyr Tydvil.—It is currently reported here, amongst the working classes, that more flourishing times may be expected in a few weeks. Many orders have lately been received at all the works.—[Correspondent of the *Liverpool Mercury.*]

Wolverhampton.—The present position of the iron trade in this neighbourhood is simply this:—Owing to the very low price of the commodity, it has been thought a favourable time by speculators to make investments in it; some stock, consequently, has been purchased with a view to bringing it into market when advanced prices may occur; and again, large consumers of iron, such as nailmakers, machinists, and others, have desired to place orders on the ironmasters' books, at present prices—(not an "advanced" price—stipulating for the delivery of the iron at different periods—viz., at one, two, or three months' hence. Of course, where an effort to replace stock sold to speculators is making work is going forward—but these sales, so far as a *bona fide* improvement is concerned, must go for nothing; indeed, they may be considered detrimental rather than otherwise; for iron in such hands is sure to come in upon an advancing market, and check the expected rise. Besides, the profit will go to the speculator, not to the ironmaster and his men. With regard to the other class of orders, they, of course, wherever the ironmaster could do so, have been refused. To pledge himself to supply iron, for months to come, at present prices, it is clear could not do either ironmaster or workman any good; in fact, it was nothing else than binding himself for the time to ruin. The low prices are the secret of the increased demand, even slightly increased as it is; to supply it at present prices would not be a step in the way of improvement; and hence, before we talk of real improvement, we must witness a stronger symptom.—*Wolverhampton Chronicle.*

Stourbridge.—During the last week there have been symptoms of improvement in the condition of the iron and coal districts of this county. It was stated that one (the largest) master in the neighbourhood of Stourbridge had put on additional furnaces, by which some hundreds of men had obtained employment—the gentleman alluded to was Mr. Foster, late M.P. for Bridgnorth. The statement was true, but it ought to be stated that the furnaces "put on" were, what are termed "puddling-furnaces;" such, however, was the physical debility of the men, owing to their recent privations, that when they went to work, they were utterly unable to endure the labour. On the Tuesday morning several of them from weakness were unable to continue their employment, and required rest and additional food before they could proceed with their work—such is the statement of their respective employers. The demand for iron is, as compared with what it was some weeks ago, very good, but the prices, notwithstanding an advance, are still ruinously low. Amongst the small doubtful men little is doing, but the large works are getting into good employ. During the last fortnight the Gospel Oak Works, one of the most extensive in South Staffordshire, situate between Dudley and Bilston, have received an order for 7000 tons of castings for Liverpool. The order, when executed, will amount to not less than 350 boat loads. The business at the works of the Messrs. Williams, Wednesbury Oak, is likewise improving, indeed, from all appearances, now the state of credit in the country is exploded, affairs are likely to be placed and conducted upon a safer and surer foundation than hitherto. There are at present in South Staffordshire, sixty-nine furnaces in blast and seventy-one out. The average of the weekly "make" is 5830 tons. The furnaces at work, if pressed, it is calculated, could double this amount of "make," and, as a matter of course, *if*, in addition, all the furnaces out were in, the manufacture of iron would be quadrupled.—*Chester Chronicle.*

Birmingham.—We have much gratification in stating that the iron trade is decidedly improving. The reports which have reached us from various quarters are fully corroborated by our Dudley correspondent, as will be seen by reference to our district news.—*Birmingham Advertiser.*

Dudley.—Commercial prospects, so far as this neighbourhood is concerned, are certainly looking better, and are brightening every day. The iron trade has unquestionably improved during the last fortnight, and so great is now the demand for pig-iron, that the most respectable masters are unwilling to sell at old prices; in fact, pig-iron has already been sold at an advance in several cases. The circumstance of so many furnaces being recently blown out, will, of course, tend to an increased demand from those ironmasters who continue in the trade; but, besides this increase of demand, arising from, and occasioned by, a decrease in the supply, there are evident signs of permanent improvement in the market for manufactured iron. The only legitimate ground for anxiety as to the future, seems to be in reference to the vast number of workmen who have been thrown out of employment by recent failures and stoppages. This appears calculated to give some concern to the reflective mind, and deserves the attention of all, particularly our legislators and those who have it in their power to employ additional labour. As stated in the *Times* of to-day (August 14), the report as to the bank of Dixon and Co. is most satisfactory—a circumstance not a little important in this district, and not a little calculated to cheer our spirits.—*Ibid.*

— It affords us the highest satisfaction to announce that the iron trade of South Staffordshire has shown symptoms of improvement during the past week. Mr. Foster, of Stourbridge, has put four puddling-furnaces in blast which had previously been closed, and an extensive order for castings had been received at Gospel Oak Works.—*Aris's Birmingham Gazette.*

PROSPECTS OF THE IRON AND COAL TRADES IN AMERICA.

[From *Notes by a Man of Business.*]

I have visited the great anthracite coal region at Pittsville, ninety-six miles west of Philadelphia; it is an astonishing district. The business commenced only seventeen years ago, and there are already five or six towns and villages built in the midst of the wildest mountain region imaginable, containing about 15,000 inhabitants, all supported by the coal trade. Coals can be obtained here in almost unlimited quantity; besides the supply for the neighbourhood, about 20,000 tons are sent down weekly by the canal and railway to Philadelphia, and 30,000 tons could be obtained readily if required. Colliers earn about 24s. and labourers 16s. per week. The colliers in this neighbourhood are as sober, moral, and intelligent, as any working population I have yet seen, even in America; they are almost all teetotallers, and they, their wives, and children, are genteelly dressed on Sundays, attending their respective chapels; each has a cottage and garden, many of them their own; most families have a cow, which they turn into the woods to graze, free of cost; fuel they get free, beef and mutton 5d. to 7d. per lb., butter 1d. per lb., flour 18s. to 20s. per barrel of 196 lbs. The general condition of working men in America is much better than in England, but it is getting worse; there is less demand for labour, and wages are declining. The truck system is likewise practised here to a considerable extent, in a similar manner, and attended with the same evils, as in England.

The manufacture of iron in the states is as prostrate as in England; the high duty has done the American ironmasters no service as yet; they complain that their sales and prices are less than before. There are five furnaces at Danville, near Pittsville, the four largest of which, lately built, have never been in blast; at Shamokin is another furnace that was in blast only six weeks, and is now standing; one at Pittsville is standing; the Lenagh furnaces are standing; Paterson (Baltimore) has ceased making; Ellicotts (Baltimore) will be shortly at a stand; the Ulster are out, besides many others. I obtained a calculation of the cost of a ton of pig iron in Baltimore—[illegible] per ton. In manufactured iron, the Americans give all possible encouragement to their own make, and feel no desire to push the sale of British iron. In quantity and quality the Americans are making great progress; some descriptions I examined were of excellent quality, particularly boiler-plates. The general complaint against American manufactured iron is, the want of uniformity in quality, but they are improving in this; and, in my opinion, as wages are fast coming down in this country, they will, in a very few years, not only be able to compete with us in price as well as quality in their own market, but in the market of the world. The iron makers are very powerful in Congress, and unless our Corn Laws are greatly altered, the duties on the importation of British goods will not be materially reduced. They all say that they are quite willing to begin a system of free trade with us, if it be really free trade; but that if we make discriminating laws with respect to British shipping, trade with British colonies, corn, machinery, and manufactures, they will take care to protect themselves; that they have abundant means to produce all the articles they receive from us, and that if they are protected a few years longer they will be able to compete with us in the price of everything. Messrs. Eastwick and Harrison, Philadelphia, have the patent for making the great excavating machine, which will excavate a square yard of earth per minute. They have made four of these machines already; two are in the United States, one near London,* the other in Russia. They are now making two more for the Russian Government; one, which I saw, will be ready in August; it will lift a stone three tons weight into a cart with great ease. The machine weighs about seventeen tons; costs 5*l.* per day for working, and wear and tear, and will do as much work as eighty men.

* See account, with illustration, of the American steam excavating machine, in the *Mining Journal* of the 24th June last.—Articles have also appeared in former Nos.

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBUSH MINING COMPANY.

August 14.—In the 110 fathom level, on the north and south lodes, there is no alteration since last reported. In the 100 fathom level, west of Hitchins's shaft, the lode is much the same, and worth about 5*l.* per fathom; the lode in the eastern stopes, in the back of this level, is eighteen inches wide, and worth 24*l.* per fathom; in the western stopes the lode is sixteen inches wide, and worth 30*l.* per fathom; in the cross-cut, south of Wall's shaft, towards the Flapjack lode, the ground is hard for driving. In the ninety fathom level, west of Hitchins's shaft, the lode is sixteen inches wide, and worth 10*l.* per fathom; in the eastern stopes, in the back of this level, the lode is fourteen inches wide, and worth 20*l.* per fathom; in the middle stopes the lode is one foot wide, and worth 15*l.* per fathom; in the western stopes, east of Hitchins's shaft, the lode is two feet wide, and worth 40*l.* per fathom; in the stopes, west of Hitchins's shaft, at this level, the lode is twenty inches wide, and worth 30*l.* per fathom. In the eighty fathom level, east of Wall's shaft, the lode is about two feet wide, and worth from 8*l.* to 10*l.* per fathom; ditto west, the lode is ten inches wide, producing stones of ore; at this level, east of the great cross-course, the lode is one foot wide, and worth 14*l.* per fathom; no lode has been taken down, in driving west on the north lode, during the past week. The stopes in the back of the eighty fathom level are improved; the lode is now eighteen inches wide, and worth 22*l.* per fathom. In the deep adit, east of Lady Beam shaft, the lode is eighteen inches wide, composed of capel, spar, and mundic. The pitches are looking favourable.

T. Richards.

UNITED HILLS MINING COMPANY.

August 11.—In Williams's engine-shaft the lode is four feet wide, one foot on the north producing ore. In the seventy fathom level east the lode is four feet wide, two and a half feet ore of fair quality. In the seventy fathom level west the lode is four feet wide, producing but little ore. In the sixty fathom level, east of eastern shaft, the lode is two and a half feet wide, one foot on north part producing ore; in the winze sinking under ditto the lode is four feet wide, three feet of average quality. In the sixty fathom level, east of James's shaft, the lode is six feet wide, orey throughout, but not rich. In the sixty fathom level, west of ditto, the lode is eight feet wide, producing ore of average quality. In the sixty fathom level, west of diagonal shaft, the lode is three and a half feet wide, orey throughout, coarse in quality. In the sixty fathom level, east and west of Nettle's winze, the lode is six feet wide, two feet on the north part producing ore. In the fifty fathom level, east of eastern shaft, the lode is four feet wide, two feet very good ore; in the winze sinking under ditto the lode is two and a half feet wide, one foot ore of good quality. In diagonal shaft, sinking under the sixty fathom level, the lode is three feet wide, producing some good stones of ore. In the winze, sinking under the forty fathom level east, the lode is three feet wide, orey throughout, but not rich. In Gibson's shaft, sinking under the twenty fathom level, the ground continues hard. In Turner's shaft, sinking under ditto, the lode is two and a half feet wide, eighteen inches ore of fair quality. In Hill's shaft, sinking under the ten fathom level, the lode is two feet wide, producing but little ore. In the twenty fathom level, east and west on Stacy's lode, the lode is eighteen inches wide, nine inches on south part ore of good quality. The cross-cut south, at the ten fathom level, is driving south to cut Stacey's lode.

N. Langdon. S. H. Pearce.

TINCROFT MINING COMPANY.

August 15.—I am glad to say, that we have a good course of ore in the winze sinking under the forty fathom level, west of engine-shaft, worth about 30*l.* per fathom. The forty and fifty ends east are looking well, the former chiefly for tin, the latter for copper ore, each worth about 20*l.* per fathom. The stopes from the ends of the winze, sinking under the fifty east, are yielding excellent quality ore, worth 30*l.* per fathom. The sixty end west is worth for ore about 20*l.* per fathom. The bottom ends are not looking quite so well as last week, but, on the whole, our prospects are good.

W. Paul.

TRELEIGH CONSOLS MINING COMPANY.

August 14.—At the fifty, east of Good Fortune, the lode is fifteen inches wide, and worth 5*l.* per fathom. The fifty west is three feet wide, and worth 14*l.* per fathom. The forty-four west is three feet wide, producing good stones of ore. The thirty-four west is the same size, with stones of ore. At Christoe, at the eighty west, the lode is fifteen inches wide, with stones of ore and very wet. At the seventy east the lode is eighteen inches wide, much improved, with fine stones of ore. At the sixty east the lode is three feet wide, and very kindly. The fifty east is three feet wide, and worth 6*l.* per fathom.

W. Symons.

WEST WHEAL JEWEL MINING ASSOCIATION.

August 14.—The ground in Buckingham's engine-shaft, sinking below the eighty-five fathom level, is a little more favourable. In the eighty-five east, on Wheal Jewel lode, the horse has completely left the lode, and the branch has come into it, two feet wide, worth 5*l.* per fathom. The eighty five west, on the same lode, is one foot wide, containing spots of ore. The seventy west, on this lode, is worth 12*l.* per fathom. The winze in the bottom of the seventy east is worth 20*l.* per fathom. The seventy east on the new lode is twenty inches wide, of a very promising character. No lode taken down in any other part of the mine since our last.

S. Lean.

CONSOLIDATED TRETOIL MINING COMPANY.

August 14.—The lode in the fifty fathom level, east of Henwood's shaft, is six inches wide, tribute ground. The lode in the rise, in the back of the fifty fathom level, west of Henwood's shaft, is one foot wide, good tribute ground. The lode in the forty fathom level, east of Henwood's shaft, is one foot wide, good tribute ground. The lode in the rise, in the back of this level, is one foot wide, very good tribute ground. We have sampled this day ninety-one tons of ore; we should have sampled a larger quantity, had it not been for a breakage in our eastern engine, which is now right again.

H. Williams. J. Morcom.

CORNUBIAN MINING COMPANY.

August 14.—The lode in Murray's engine-shaft, sinking below the sixty fathom level, is three feet wide, worth 45*l.* per fathom; this holds out every encouragement of being an improving and lasting run of lead. In sinking the new winze below the sixty fathom level, on the north lode, we find it continues to pass through good orey ground; but, having met with water, we are obliged to suspend until the seventy end is driven a few fathoms further west, to drain the ground. The north lode in the seventy fathom level, driving west of great engine-shaft, is large, hard, and excessively wet; consequently, we have gradually turned south, to drive on Chiverton lode, for the purpose of effecting a more rapid progress westward—the latter being the most favourable to drive on; we shall cross-cut occasionally, to see the north lode. The lode in the stopes in the back of the sixty fathom level remains much the same, as to prospects, as it has been for some time past. In the sixty fathom level west, we are cutting north, to see the north lode; the ground here is rather hard.—On Thursday next we shall sample about 57 or 58 tons of silver-lead ore.

J. Webb. H. Rowe, Jun.

CALLINGTON MINING COMPANY.

August 14.—In furnishing you with a report of these mines, I beg to say, at the north engine-shaft we have sunk about fourteen feet below the sixty fathom level; at this level, driving north, the ground is favourable, lode about four inches wide, good work for silver-lead ores. At the fifty fathom level, driving south, the lode is about three inches wide, producing silver-lead ores. At the forty fathom level, driving south, lode about eight inches wide, good work for silver-lead ores. At the fifty fathom level, driving east, the lode is about six inches wide, composed of spar and mundic.—Since our last setting, on the 7th inst., we have made but little progress at the twenty and thirty fathom levels, on the copper lode—at the latter of which, however, we have a very kindly end, lode about eighteen inches wide, producing some fine stones of yellow ore. At Harrowbarrow still the ground is favourable; we have not yet cut the lode on west side of cross-course. At the south mine, the new horse dressing-floors are being got in working order; the boiler, cylinder, and bob, with most of the engine, are on the mine. Mr. West has been here to-day, giving directions for putting the engine together.—Our tributers are working with spirit, and getting wages.

J. T. Phillips.

MINE ACCIDENTS.

Wentmoor Colliery.—On Wednesday, the 9th inst., John Bond was accidentally killed by a fall.

Alexandrina Pit.—On the same day Thomas Fletcher died from severe injuries received some time previous, by the falling in of the roof of the level where he was working; both legs and one arm were broken, and his back severely injured.

Tynyllwyn Colliery.—On the 7th inst. Samuel Perkins was killed by a heavy stone falling on him from the roof where he worked.

Thornley Colliery.—On the 13th ult., Arthur Wiseman, aged 71, had descended the pit, and jumping out of the cage on to the metal plates, placed for the trams to run on, his foot slipped, and threw him heavily; he lingered till the 23d, when he expired.

Aberaman, Cyfarthfa.—Several colliers were greatly injured by the "damp" at this place on Monday last.

Pendleton Colliery.—A dreadful accident took place at this colliery, the property of Mr. Fitzgerald, on Sunday last, about four o'clock. Two men were at work in the old engine pit, making a recess wherein to place a cistern, when one of the wooden rings, which are placed at intervals to support the pit, broke, and the brickwork above fell on to the scaffold. One of the men, hearing the first noise, crept behind the pumps, and thus escaped injury; but the other, named Armstrong, sustained the whole shower of bricks, which took upwards of an hour to remove, when he was discovered quite dead. He was to have been married on that day, but, from the pressing nature of the work, it was put off to the next day.

CURRENT PRICES OF STOCKS AND SHARES.

STOCK EXCHANGE, Saturday morning, Twelve o'clock.

Consols Money, 94½ ⅝	Brazil, 5 per Cent., 71½ 72
Consols Account, 94⅝ ¾	Danish, 3 per Cent., 85½ 6¼
New 3½ per Cents., 101⅞ 2	Dutch, 2½ per Cent., 53⅝ ¾
Reduced 3 per Cents., 95⅜ ½	Ditto, 5 per Cent., 101⅝ ¾
Reduced 3½ per Cents., 102⅞ 3	Portuguese, Conv., 5 per Cent., 41¼ ⅝
Long Annuities, 12⅞ 13	Russian, 5 per Cent., 115¼ 16¼
Bank Stock, 181¼ 2½	Spanish, Actives, 5 per Cent., 19 ¼
Exchequer Bills, 56 58 pm.	Ditto, 3 per Cent., 27⅝ ¾
Belgian Bonds, 5 per Ct., 103¼ 4¼	Chili, 6 per Cent., 99 100

The premium on gold at Paris is 15⅛ per mille, which, at the English Mint price of 3*l.* 17*s.* 10½*d.* per ounce for standard gold, gives an exchange of 25 40, and the exchange at Paris on London at short being 25 65, it follows that gold is 0·64 per cent. dearer in London than in Paris.

By advices from Hamburgh the price of gold is 430 per mark, which, at the English Mint price of 3*l.* 17*s.* 10½*d.* per ounce for standard gold, gives an exchange of 13 13, and the exchange at Hamburgh on London at short being 13 13¾, it follows that gold is 0·13 per cent. dearer in London than in Hamburgh.

The course of exchange at New York on London is 108¾ per cent., and the par of exchange between England and America being 109 23-40 per cent., it follows that the exchange is 1·07 per cent. against England. But the quoted exchange at New York being for bills at 60 days' sight, the interest must be deducted from the above difference.

[*From our own correspondents.*]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 94⅝*l.* to 94*l.*; 3½ Stock, 101½*l.*; ditto New, 1830, 101½*l.*; 3½ per Cent. Debentures, 94*l.*; Bank Stock, 178½*l.*—Kingstown Railway, 111*l.*; Dublin and Drogheda, 36¼*l.*—Hibernian Bank, 30½*l.*; Royal Bank, 10¼*l.*; Provincial Bank, 40*l.*—City of Dublin Steam Co., 85*l.*; ditto Stock, 160*l.*, 40*l.*—Steam Ship Building Company, 46*l.*; British and Irish ditto, 50*l.*—National Insurance Company, 8¼*l.*; Patriotic, 8*l.*—Mining Company of Ireland, 12¼*l.*; Wicklow Copper Mines, 13¼*l.*

LEEDS, THURSDAY.—Last week we stated that the attention of all parties connected with railways was so entirely absorbed with the meetings then going on, as only to enable us to give the quotations of the day. The prospects which were held out at the North Midland meeting, at Derby, and at Leicester of the Midland Counties, were such as to lead any one, disposed to listen to argument, to embark in these undertakings, which, when connected with the Birmingham and Derby line, will form a link of railways of nearly 180 miles in length. In your Journal of the 27th August last, we made "pointed allusion" to this subject, and in the *Railway Times* of the 17th September, the Editor followed it up, by bringing forward a plan to amalgamate the three lines. In our fortnightly circular of the 26th September, we said—"Nothing, in our opinion, would serve so effectually to rescue these undertakings from their present unfortunate position than such an arrangement."—That the railway world sees the advantages to be gained by such an amalgamation, is very clear, from the advance in price of all the three stocks. The North Midland, previously to the meeting, being at 73*l.*, and now at 75*l.*; the Midland Counties being at 69*l.*, and now at 71½*l.* to 72½*l.*; and the Birmingham and Derby, which were then at 40*l.*, being now generally sold at 48½*l.* That the junction of these three lines will be the forerunner of many other advantageous arrangements, as respects other lines, there can be no doubt; and we look upon the present time as a new era in the railway world—first, from the economy exercised in some of the old lines, such as the North Midland, which has enabled the reduction of expenditure to be upwards of 11,000*l.* for the half-year ending 30th June last; and, next, from the small cost of lines now forming—for instance, the Yarmouth and Norwich, which is contracted for by first-rate men, to cost only 10,000*l.* a mile, including every thing—even the land, the termini, the carriages, the locomotive; in point of fact, the line is to be opened for 10,000*l.* per mile, and put into the shareholders' hands at this price; then, there is the Newcastle and Darlington, the estimated cost of which was 500,000*l.*, with liberty to borrow one-third more; and now it is perfectly clear that the line will be opened next year (July), with a cost of full 100,000*l.* less than the estimate. These circumstances have given a stimulus to the lines in our locality, as well as to the generality of those, the cost of which is ascertained. York and North Midlands have been done at 100 ex div.; and Hull and Selbys are worth 49*l.* Manchester and Birminghams have advanced from 25*l.* to 27*l.*; and Manchester and Leeds are very firm at 56 pm. The "Great Lion" of railways, the London and Birmingham, has actually been sold at 1[illegible] pm., on 100*l.* paid, ex the div. of 5 per cent. for the half-year. We must confess we are surprised that the guaranteed stocks, such as Hull and Selby quarters, and Northern and Eastern quarters, remain so inanimate—the former have 6 per cent. guaranteed for ten years, and yet are only at 2*l.* 6*s.* 6*d.* pm., although the whole amount may be paid up immediately; and the latter have 5 per cent. guaranteed for four years, after the opening to Newport, which will take place in two years, and are only at 33*s.* 6*d.* pm.; at the same time they will receive 5 per cent. in perpetuity in six years' time—providing the parties should not choose to become joint proprietors, when the dividends then declared may be more, if "railways progress" according to our ideas. Those quarters, too, may be paid up immediately, and receive 5 per cent. interest.—North Midland 74½*l.*; York & N. Midland, 100*l.*; Leeds and Selby, 100*l.*; Hull and Selby, 49*l.*; Gt. North of England, 93*l.*; Manchester and Leeds, 75*l.*; Sheffield and Rotherham, 30*l.*; Edinburgh and Glasgow, 50½*l.*; Bristol and Exeter, 50*l.*; Cheltenham and Great Western, 20½*l.*; Northern and Eastern, 8½*l.*—Leeds Banking Company, 15*l.*; Leeds and West Riding, —*l.*; Leeds Commercial, —*l.*; Yorkshire District, —*l.*—Leeds and Liverpool Canal, 500*l.*; Huddersfield, 12½*l.*; Rochdale, 60*l.*—Leeds and Yorkshire Assurance Company, 15½*l.*—Leeds Old Gas Company, —*l.*; Leeds New Gas Company, 18*l.*—Leeds Commercial Buildings, 20*l.* R. B. WATSON & CO.

HULL, THURSDAY.—We hand you the following as our latest prices:—Birmingham & Derby, 48*l.* to 49*l.*; Edinburgh and Glasgow, 50*l.* to 51*l.*; Great North of England, 93*l.*; Hull & Selby, 48½*l.* to 49½*l.*; Leeds and Selby, 100½*l.* to 101*l.*; London and Birmingham, 226*l.*; Liverpool and Manchester, 200*l.* to 202*l.*; London and Brighton, 40*l.*; Manchester and Leeds, 75*l.* to 80*l.*; Midland Counties, 72*l.*; Newcastle and Carlisle, 80*l.*; Northern and Eastern, 8*l.*; North Midland, 75*l.*; South Eastern, 28*l.*; York and North Midland, 101*l.*—Yorkshire District Bank, 11*l.*; Hull Banking Company, 5*l.* to 5½*l.*—Hull Dock Company, 1200*l.*; Hull Gas, 20½*l.* to 21*l.*; Hull Flax and Cotton Mills, 10*l.*; Hull Marine Insurance, —*l.*

EDINBURGH, THURSDAY.—Edinburgh and Glasgow Railway, 50½*l.*; Dalkeith and Edinburgh, 32*l.*; Glasgow and Greenock, 14½*l.*; Glasgow and Garnkirk, 30*l.*; Glasgow and Ayrshire, 39*l.*; Wishaw and Coltness, 20*l.*; Dundee and Arbroath, 18*l.*; Arbroath and Forfar, 22*l.*—Bank of Scotland, 163*l.*; Royal Bank, 162*l.*; British Linen Company, 210*l.*; Commercial, 162*l.*; National, 14½*l.*; Edinburgh and Leith, 4½*l.*; Glasgow Union, 41*l.*; Western Bank of Scotland, 60*l.*; City of Glasgow, 11*l.*—Caledonian Fire and Life Insurance, 14*l.*; Hercules Fire, 11*l.*; North British Fire and Life, 33*l.*; Standard Life, 43*l.*—Edinburgh Gas, 57½*l.*; Edinburgh and Leith Gas, 20½*l.*; Forth and Clyde Canal, 12*l.*

GLASGOW, THURSDAY.—Ballochney Railway, 75*l.*; Dundee and Arbroath, 18*l.*; Edinburgh and Glasgow, 50½*l.*; Garnkirk and Glasgow, 30*l.*; Glasgow and Greenock, 14½*l.*; Glasgow, Paisley, Kilmarnock, and Ayr, 39*l.*; Monkland and Kirkintilloch, 40*l.*; Slamannan, —*l.*; Wishaw & Coltness, 20*l.*—Forth and Clyde Canal, 12*l.*—Bank of Scotland, 163*l.*; Royal, 162*l.*; British Linen Company, 210*l.*; Commercial, 162*l.*; Glasgow Union, 41*l.*—North British Fire and Life Insurance, 10½*l.*; Caledonian Fire and Life, 14½*l.*; Scottish Marine, 5*l.*—Royal Exchange, 4*l.*—Old Clyde Shipping Company, 30*l.*—Shotts Iron Company, —*l.*

NEWCASTLE-UPON-TYNE.—Our share market is firm, with a fair inquiry for good stocks. The latest prices are, viz.:—The North of England Joint Stock Bank, 5½*l.*; Northumberland and Durham District, 6*l.*; Newcastle, Shields, and Sunderland Union, 5½*l.*; Newcastle-upon-Tyne Joint Stock, 11*l.*; Newcastle Commercial, 5½*l.*; Sunderland, 6*l.*; Darlington District, 5*l.*; Carlisle City and District, 10*l.*; Carlisle and Cumberland, 5½*l.*; Stockton and Durham County, 3½*l.*—Newcastle and Carlisle Railway, 75*l.*; Newcastle and North Shields, 5*l.*; Brandling Junction, 27*l.*; Durham and Sunderland, 18*l.*; Clarence, 16*l.*; the Maryport and Carlisle, 50*l.*; Hartlepool Dock and Railway, 17½*l.*; Bishop Auckland and Weardale, 6*l.*; Great North of England, 94*l.*; Newcastle and Darlington Junction, 17*l.*—Newcastle Union Shipping Company, 11*l.*; Port of Newcastle, 6*l.*; Gateshead and Tyne, 6*l.*—North and South Shields Steam Ferry, 11*l.*—Newcastle Subscription Water Company, 20*l.*—Newcastle and Gateshead Union Gas Company, 7½*l.*—Durham County Coal Company, 1½*l.*; Northern Coal Mining Company, —*l.*

LIVERPOOL, FRIDAY.—Chester and Birkenhead Railway, 17*l.*; Eastern Counties, 9½*l.*; Edinburgh and Glasgow, 50½*l.*; Grand Junction, 20*l.*; Great Western, 85½*l.*; Great North of England, 93*l.*; Lancaster and Preston, 33½*l.*; Liverpool and Manchester, 200*l.*; London and Birmingham, 227*l.*; London and South Western, 63½*l.*; London and Brighton, 40*l.*; Manchester, Bolton, and Bury, 30½*l.*; Manchester and Birmingham, 26½*l.*; Manchester and Leeds, 76*l.*; Midland Counties, 71*l.*; North Midland, 74½*l.*; North Union, 70½*l.*; Paris and Rouen, 20½*l.*; South Eastern, 28½*l.*; York and North Midland, 99½*l.*—Borough Bank, 13½*l.*; Bank of Liverpool, 21½*l.*; Commercial, 13½*l.*; Liverpool Banking Company, 9*l.*; Manchester and Liverpool District, 9*l.*; North and South Wales, 6*l.*; Royal, 27½*l.*; Union, 13½*l.*—Fire and Life Assurance, 13½*l.*; Marine Assurance, 5½*l.*—Asiatic Carrying Company, 4½*l.*—Palmerston's Bitumen Company, ½*l.*—Gas-Light Company, 150*l.*; New Gas and Coke Company, 18*l.*—Harrington Dock, 2½*l.*—Bootle Water Works, 20*l.*; Liverpool and Harrington Water Works, 15½*l.*

BIRMINGHAM, THURSDAY.—London and Birmingham Railway, 225*l.* to 226*l.*; London and Brighton, 40*l.* to 40½*l.*; London and South Western, 65*l.* to 65½*l.*; Great Western, 86*l.* to 88*l.*; Birmingham & Derby, 48*l.* to 49*l.*; Birmingham & Gloucester, 53*l.* to 54*l.*; Manchester and Leeds, 76*l.* to 80*l.*; Edinburgh and Glasgow, 50*l.* to 51*l.*—Birmingham Banking Company, 13½*l.*; District, 5½*l.*; Borough, —*l.*—Birmingham Canal, 330*l.*; Birmingham and Worcester, 50*l.* to 60*l.*; Birmingham Water Works, 90½*l.*; Birmingham Gas, 110*l.*; Birmingham and Staffordshire, 8½*l.* to 9*l.*; Old Union Mill, 5½*l.*; New ditto, 1*l.*

COAL MARKET, LONDON.

MONDAY.—Prices of coals per ton at the close of the market:—Bedde's West Hartley 14 9—Carr's West Hartley 14 9—Davison's West Hartley 14 9—New Tanfield 13—Cold's Benwell [illegible]—Bennett's West Hartley 14—Taylor's West Hartley 14—Tanfield Moor [illegible]—Gardiner [illegible]—Heaton [illegible]—Hilda [illegible]—Holywell [illegible]—Bennett's [illegible]—Wharncliffe [illegible]—Bradyll's Hetton [illegible]—East Hetton [illegible]—Hetton [illegible]—Lambton [illegible]—Stewart's [illegible]—Hough Hall [illegible]—Kelloe [illegible]—Adelaide [illegible]—Wall's End Barrington Tees [illegible]—Bowen's Deanery [illegible]—Brown's Tees [illegible]—Cowpen Hartley [illegible]—Howard's West Hartley [illegible]—Llangennech Coal [illegible]—Powell's Duffryn Steam [illegible]—Gilbert's Hartley [illegible]—Ships arrived, 53.

WEDNESDAY.—Bedde's West Hartley [illegible]—Carr's West Hartley [illegible]—New Tanfield [illegible]—Cold's Benwell [illegible]—Bennett's West Hartley [illegible]—[illegible]—Taylor's West Hartley [illegible]—Tanfield Moor [illegible]—West Hartley [illegible]—Stewart's [illegible]—Heaton [illegible]—Hilda [illegible]—Wharncliffe [illegible]—Bradyll's Hetton [illegible]—Hetton [illegible]—Haswell [illegible]—Stewart's [illegible]—Hartlepool [illegible]—Bowen's Deanery [illegible]—Cowpen Hartley [illegible]—Powell's Duffryn Steam [illegible]—Ships arrived, 57.

SALE OF COPPER ORES IN CORNWALL.

Sampled August 3, and sold at Andrew's Hotel, Redruth, August 17.

Mines.	Tons.	Price.	Purchasers.	Mines.	Tons.	Price.	Purchasers.
Tresavean	102	£3 15 6	Williams.	Wh. Provid.	35	£9 15 6	English Co.
ditto	42	5 15 6	Mines Royal	ditto	14	2 19 6	—
ditto	42	5 15 6	P. Grenfells.	ditto	3	17 17 0	Freemans.
ditto	82	5 0 6	Williams.	Holmbush	161	5 5 6	Williams.
ditto	74	6 12 6	Mines Royal	ditto	100	9 0 6	—
ditto	58	9 2 6	—	P. Consols	35	6 6 6	Vivians.
ditto	28½	1 14 0	English Co.	ditto	41	5 13 6	—
ditto	28½	1 14 0	Freemans.	ditto	41	5 15 6	Williams.
Fowey C.	112	5 16 0	Vivians.	W. Gorland	58	6 9 6	English Co.
ditto	110	6 9 0	Freemans.	ditto	15½	1 18 6	—
ditto	72	4 2 0	Nevill & Co.	ditto	15½	1 18 6	Freemans.
Wh. Provid.	88	4 7 6	Vivians.	ditto	15½	1 18 6	Nevill & Co.
ditto	92	5 4 6	English Co.	Penstruthal	43	6 7 6	English Co.
ditto	27	7 12 6	Vivians.	ditto	21	3 12 6	—

TOTAL PRODUCE.

Tresavean	461	£2391 2 0	Par Consols	177	£1074 6 6
Fowey Consols	294	1614 6 0	Wh. Gorland	105	449 18 6
Wh. Providence	260	1585 13 0	Penstruthal	64	436 5 0
Holmbush	261	1422 18 0			

Average standard, 99*l.* 7*s.*—Average produce, 8¼.—Average price, 5*l.* 12*s.* 6*d.*—Quantity of ore, 1567 tons.—Quantity of fine copper, 132 tons 1 cwt.—Amount of money, 8824*l.* 6*s.* 0*d.*—Average standard of last sale, 100*l.* 7*s.*—Average produce, 7⅞.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal Company	170	£1208 11 0
English Copper Company	297½	1675 16 10
Vivian and Sons	374	2157 16 6
Freeman and Co.	157	841 13 4
Grenfell and Sons	42	242 11 0
Sims, Willyams, Nevill, Druce, and Co.	87½	325 7 4
Williams, Foster, and Co.	436	2292 10 0
Total	1567	£8824 6 0

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—United Mines, 1240; North Downs, 210; Trethellan, 126; Fowey Consols, 234; West Caradon, 162; Tresavean, 151; Creegbraws, 94; Treleigh Consols, 92; Wheal Mosset, 61; Wheal Burrow, 32.—Total, 2456 tons.

Copper ores for sale on Thursday week, at Serpell's Hotel, Pool.—Mines and Parcels.—North Roskear, 790; Consolidated Mines, 722; South Roskear, &c., 580; South Wheal Basset, 303; East Wheal Crofty, 261; Hallenbeagle, 267; Fowey Consols, 249; Dolcoath, 228; Wheal Trewavas, 160; East Pool, 176; Trevannance Consols, 160; Tretoil, 91; Mark Valley, 77; Wheal Harriet, 66; Tregolian, 19; Wheal Clifford, 18; East Crinnis, 12; Truro Consols, 3; Clegger, 1; South Caradon, 487; Charlestown United Mines, 11.—Total, 4452 tons.

SALE OF COPPER ORES AT SWANSEA.

Copper ores for sale August 23.—Cobre 114, ditto 93, ditto 90, ditto 73, ditto 42, ditto 26, ditto 121, ditto 118, ditto 109, ditto 97—Chili 100, ditto 71, ditto 60, ditto 56, ditto 51, ditto 50, ditto 47, ditto 6, ditto 2, ditto 76, ditto 56—Santiago 130, ditto 100, ditto 95, ditto 91—Knockmahon 112, ditto 81, ditto 57, ditto 56, ditto 47—Ballymurtagh 79, ditto 30, ditto 23, ditto 21—Bearhaven 97, ditto 63—Valparaiso 36, ditto 29—Mt. San Fernando 70, ditto 37—Llandidno 90.—Total, 2822 tons.

WORK PERFORMED BY CORNISH ENGINES.

The number of pumping-engines reported for the month of July is 39—the quantity of coals consumed being 3380 tons, lifting, in the aggregate, 33,000,000 tons of water 10 fathoms high—the average duty of the whole is, therefore, 54,000,000 lbs. lifted 1 foot high by the consumption of a bushel of coal.—The following are those engines the work of which has exceeded the average:—

Mines.	Engines.	Length of stroke in cylinder.	Load per inch.	Stks. per min.	Consump. of coal in bus.	Lbs. lifted 1 ft. by a bus. of coal	Aver. quan. of water p. min.
Gt. W. Fortune	Prosper 80-in. c	9·7	10·5	6·8	2496	64,303,996	892·
Wh. Virgin	Taylor's 80-in. c	10·0	13·8	5·8	1616	58,334,063	336·9
Godolphin	Sims's 80-in. c	10·0	10·9	5·8	1542	64,116,602	1627·
Ditto	Roberts' 80-in. c	10·0	11·9	6·3	2394	64,126,323	
Great Work	Leeds, 80-in. c	9·0	14·3	6·0	1900	68,237,300	190·9
Wh. Vor	Borlase's 80-in. c	10·0	10·6	6·7	4320	65,018,100	—
North Roskear	New 70-in. c	10·0	10·39	5·64	1916	66,703,613	275·8
East W. Crofty	Trevenson 80 c	10·33	11·45	5·7	1666	61,475,713	292·4
Carn Brea	70-in. c	9·0	13·63	9·43	1333	59,464,613	298·4
Ditto	Sim's 50-in. combined cylinder	9·9	14·0	4·8	667	67,491,457	
United Mines	Taylor's 85-in. c	11·0	13·45	6·1	2331	100,715,010	1398·
Ditto	Loam's 85-in. c	10·0	16·9	6·3	2993	69,513,513	
Ditto	Hocking's 85-in. c	10·0	17·33	6·6	4333	74,497,997	
United Hills	Williams's 80 c	10·0	9·4	6·16	1710	79,743,545	433·29
Polberro Con.	Vigurs' 60-in. c	9·0	11·0	7·06	1079	54,479,197	—
East Wh. Rose	Michell's 70-in. c	10·0	7·8	4·89	[illegible]	73,460,049	—
Fowey Con.	Austin's 80-in. c	10·33	10·33	6·16	2828	61,432,799	420·16
Par Consols	80-in. c	9·0	12·4	4·8	1000	64,343,300	338·36

LATEST CURRENT PRICES OF METALS.

LONDON, AUGUST 18, 1843.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
SPELTER—Foreign, ton	0 0 to	23 0 0	COPPER—Old per lb.		0 0 9
For delivery	0 0 0	23 0 0	Cake p. ton	76 0 0 to	79 0 0
ZINC—English sheet	0 0 0	34 0 0	For. cake	0 0 0 to	—
QUICKSILVER per lb.		0 4 6	tile	77 0 0 to	79 0 0
IRON—English bar, &c. p. ton		4 12 6	TIN—English, blocks, &c. cwt.		3 0 0
Nail rods	0 0 0	5 10 0	bars	0 0 0	3 1 0
Hoops	6 15 0	7 0 0	Foreign, Banca	2 17 0	3 10 0
Sheets	7 10 0	8 0 0	Straits	0 0 0	2 16 0
Cargo in Wales	0 0 0	4 0 0	Peruvian	0 0 0	2 8 0
Pig, No. 1, Wales	3 0 0	3 5 0	Tin plates, No. IC p. box	1 5 0	1 7 6
No. 1, Clyde	0 0 0	1 18 6	No. IX	1 0 0	1 13 6
For., Swedish	9 5 0	9 10 0	wasters 5s. p. box less		
Russian, CCND		—	LEAD—Sheet milled p. ton		16 15 0
PSI		—	Shot, patent	18 10 0	19 0 0
Gourieff		—	Red		—
Archangel		—	White		—
STEEL—Swedish keg p. ton		16 0 0	PIG-LEAD—English	0 0 0	16 0 0
Faggot	0 0 0	16 15 0	Spanish	0 0 0	15 15 0
COPPER—English sheathing lb.		0 0 8½	American	0 0 0	15 0 0

EXPORTATION OF THE PRECIOUS METALS.—The following are the official returns of the exports of gold and silver from the port of London for the week ending Thursday last:—

Silver bars to the Cape of Good Hope and Madras.. 25,548 ounces.

CURRENT PRICE OF GOLD AND SILVER.

Foreign Gold in Bars, per oz.	£3 17 9	New Dollars per oz.	£ 4 10¾
Portugal pieces	0 0 0	Silver in bars (standard)	4 11¼

[*From the Midland Counties Herald of Thursday.*]

There is still no advance established in any article in the market for metals, but bar iron is held rather more firmly by the leading firms connected with Wales.

EXPORTS OF METALS TO INDIA FROM LONDON AND LIVERPOOL.

From 1st Jan. to 31st July,		1843.	1842.	Increase in 1843.
Spelter	tons	5,592	915	1927
Copper		5,670	5,169	808
Iron, British		18,601	13,000	4600
Foreign		1,470	940	530
Tin plates	boxes	4,834	1,997	6743
Lead	tons	1,000	1,200	32
Steel		600	411	414
Quicksilver	bottles	515	30	485

THE LONDON GAZETTE—BANKRUPTS.

TUESDAY.—J. F. Armstrong, Blackheath, and Staffordshire Wharf, Greenwich, china and glass dealer—J. Woollaston, Paris street West, Lambeth, furnishing ironmonger—T. Tolson, King's cross, cabinet manufacturer—G. J. Marshall, Charlestown, Kingsland road, and W. C. Hall, Islington, woollen warehousemen—J. Johnson, Little Alington, Cambridgeshire, builder—B. Hart, Cambridge, hairdresser—A. T. Fletcher, Stratford, money scrivener—H. Coleman, Norwich, draper—J. Hughes, Chelmsford, shoemaker—Hannah M. Newton, Kirkburton, Yorkshire, victualler—J. Graham, jun., Newcastle-upon-Tyne, spirit merchant—T. Cooke, Leicester, glove manufacturer—S. Watson, York, silk mercer—W. Whitfield, Bridgewater, [illegible], grocer—J. Harbottle, Alnwick, Northumberland, grocer—W. Haggett, Portsea, Flintshire, alkali manufacturer—S. Barker, Whitchurch, Shropshire, grocer—T. Hankin, Ardwick, Lancashire, grocer.

FRIDAY.—G. Walter, Oundle, Northamptonshire, grocer—T. Megarey, Lowther, Billingsgate, coal merchant—W. Tann, Old street, upholsterer—W. S. Walker, Hull, Yorkshire, grocer—B. Bennett, Clarence Cottages, Camden-town, contractor for wood paving—J. Smith, Piccadilly, upholsterer—S. Brown, Prescot, Lancashire, harness maker—J. and J. Morton, Kingswinford, Staffordshire, iron manufacturers—J. Wood, Gomersal, woollen manufacturer—[illegible], Huddersfield, Yorkshire, woollen manufacturer—J. [illegible], Ashton-under-Lyne, Lancashire, money scrivener—T. G. Hassard and H. Bingham, Sheffield, merchants—G. Johnson, Liverpool, merchant.

FRIDAY.—Adair's Main 15—Bedde's West Hartley 14 6—Carr's Hartley 15—Charlotte 13 9—Davison's West Hartley 14 6—New Tanfield 14—Cold's Benwell [illegible]—Bennett's West Hartley 15 6—Taylor's West Hartley 14—Tanfield Moor 14 6—Brown's [illegible]—Gosforth 15 6—Heaton 14 9 to 15—Hilda 14 6—Holywell [illegible]—Bewick [illegible]—Belmont [illegible]—Haswell 15 6—Hetton 15 6—Lambton 15 6—Stewart's [illegible]—Whitwell 17—Hartlepool 15 6—Wharncliffe 15—Barrington Tees 14—Bowen's Deanery 15 6—Clarence Hetton 15 6—Seymour Tees 15 6—Cowpen Hartley 15—Powell's Duffryn Steam 15 6—Hedley 15.—Ships, [illegible]

PRICES OF MINING SHARES.

BRITISH MINES.

Shares.	Company.	Paid.	Price
500	Anglesey	5	—
4,000	Bedford	2	3½
100	Botallack	175	300
20,000	British Iron	70	—
8,000	Blaenavon	50	—
128	Brewer	—	120
70	Bodnick	—	5
1,000	Callington	5	3
1,000	Carn Brea	15	150
5,000	Con. Tretoil Mining Ass.	4	1
2,000	Cornubian Lead Co.	3	4½
512	Cook's Kitchen	—	40
112	Charlestown	—	730
128	Cregg Braws	60	335
128	Cosheen	15	130
10,000	Durham County Coal Co.	37	—
128	East Pool	—	170
100	Great Consols	97	500
10,000	Hibernian	12½	2
1,000	Holmbush	14	36
2,000	Isle of Sark (Guernsey)	15	—
80	Levant	—	450
10,000	Mining Co. of Ireland	7	12½
128	Mostyn Mines	100	—
70	North Roskear	—	300
4,000	North Tamar Consols	1	—
3,000	Polberro Consols	10	—
128	Penstruthal	37	100
10,000	Rhymney Iron	50	4
1,000	Roaring Water	½	8
128	South Caradon	—	800
800	South Towan	10	1½
64	South Wheal Basset	—	320
37	Speare Moor	70	—
1,000	Stray Park	40	23
135	Tregolian	—	2
4,000	Treleigh Consols	2½	2½
6,000	Tamar Consols	3	6
6,000	Tincroft	7	13½

BRITISH MINES—continued.

Shares.	Company.	Paid.	Price
128	Trewavas	—	90
128	Treviskey and Barrier	—	200
96	Tresavean	—	800
128	Trethellan	—	200
4,000	United Hills	5	6
6,000	Wicklow Copper	5	13¾
3,846	West Wheal Jewel	10½	14½
128	West Trethellan	5	60
59	Wheal Vor	100	—
128	Wheal Providence	16	100
1,000	Wheal Bandon	½	6
	Wheal Franco	15	35
1,000	West Carbery	½	12½

FOREIGN MINES.

Shares.	Company.	Paid.	Price
5,000	Alten Mining Company	13½	4½
10,000	Anglo Mexican Co.	100	2½
3,374	Do. Subscription	25	3
2,000	Bolanos	150	5
	Ditto Scrip	15	4½
10,000	Brazilian Imperial	21	7
10,000	Bolivar	20	—
10,000	Ditto Scrip	10	2
10,000	Cata Branca—Brazilian Company	6¼	4 5
12,000	Cobre Copper Company	40	23½
8,500	Colombian Co. regis.	55	1½
10,000	Copiapo Mining Co.	12½	9
20,000	General Mining Assn.	20	6
5,351	Mexican Company	50½	—
12,000	Morambas and Cocaes	25	4½
20,836	Rl. del Monte, regis.	20½	4
	Do. unregistered		4½
	Ditto Loan Notes	150	107½
7,000	Royal Santiago	10	21
11,000	St. John d'el Rey	15	9½
82,000	United Mexican	40	3
	Black Scrip, addl. capital	5	1½
	Red New Scrip	1½	2

RAILWAY SHARE LIST AND TRAFFIC RETURNS.

Line.	Entire Lgth.	Now Open.	Present actual cost.	Pd. on Share.	Val. of Share.	Last week's returns.
Arbroath and Forfar Railway	15	15	£ 136,700	25	22	£222 9 5
Birmingham & Derby Junc.	48½	48½	1,149,000	100	40½	1472 3 8
Birmingham and Gloucester	55	55	1,460,651	100	53½	2279 10 5
Brandling Junction	25	25	434,824	50	—	937 19 2
Chester and Birkenhead	14½	14½	335,424	50	20	728 17 5
Dublin and Kingstown	6	6	340,262	100	107	—
Dundee and Arbroath	16½	16½	155,000	25	19½	645 8 2
Durham and Sunderland	16	16	266,132	56½	18	548 3 1
Eastern Counties*	51	51	2,498,556	23	9½	3865 18 2
Edinburgh and Glasgow	46	46	1,313,337	50	50½	2762 2 9
Glasgow and Ayr	51	51	960,534	50	40	1480 18 1
Glasgow and Greenock	22½	22½	799,289	25	25	1044 19 10
Gd. Junc. & Chester & Crewe	115½	115½	2,316,536	100	202	9420 18 11
Great North of England	74	45	1,301,671	100	67½	1060 18 0
Great Western	118½	118½	6,340,623	65	87½	10067 0 9
Hull and Selby	31	31	645,336	50	48	1316 8 5
Liverpool and Manchester	31	31	1,315,255	100	200	4963 13 6
London and Birmingham	112½	112½	5,922,812	100	221	19041 14 1
London and Blackwall	3½	3½	1,225,375	16⅔	4½	1409 9 1
London and Brighton	56	56	2,300,645	50	35	3251 14 4
London and Croydon	10½	10½	636,871	13½	12	463 17 2½
London and Greenwich	3¾	3¾	1,019,606	12½	4½	966 14 9
London and South Western	92½	92½	2,580,334	39½	62½	6438 10 0½
Manchester, Bolton, & Bury	10	10	777,357	35	26	704 5 9½
Manchester & Birmingham	40	31	1,888,493	40	26½	3138 8 5
Manchester and Leeds	50	50	3,650,296	70	79	5181 16 10
Midland Counties	57	57	1,698,149	100	72	3966 1 7
Newcastle and Carlisle	61	61	1,061,900	100	78	1577 8 2
Newcastle and N. Shields	7	7	232,478	45	44	647 0 0
Northern and Eastern†	32½	32½	869,067	45	34½	1794 2 0
North Midland	72½	72½	3,322,551	100	74½	3355 17 0
North Union‡	22	22	612,879	75	71	1254 18 2
Paris and Rouen	—	84	1,120,000	20	20½	4534 18 0
Paris and Orleans	—	82	2,082,580	10	20	4593 14 0
Preston and Wyre	15	19	317,000	50	36	382 16 4
Sheffield and Manchester	40	11	512,804	82½	32½	362 5 8
South Eastern	87	66	2,536,822	50	28½	4515 19 0
Taff Vale	30	30	530,723	100	—	677 13 4
Ulster	25	25	544,300	25	—	436 19 9
York and North Midland	27	27	651,031	50	100	1900 19 0

* Including Northern and Eastern Railway toll. † Rent and toll to Eastern Counties (about 100*l.* per week) included in the returns. ‡ The Liverpool and Manchester toll is deducted.

THAMES TUNNEL.

The number of passengers who passed through the Tunnel in the week ending August 12, was 57,191, yielding a revenue of £217 9*s.* 5*d.*

JOINT-STOCK BANKS.

Shares.	Company.	Paid.	Price	Shares.	Company.	Paid.	Price
15,000	Australasia	40	50	50,000	Liverpool Borough	10	14½
20,000	Birmingham	10	19	25,000	Ditto Bank of	12½	26
20,000	British N. American	40	39	12,000	Ditto Banking Co.	10	9½
10,000	Cheltenh. & Gloucesh.	5	17½	50,000	Ditto Commercial	10	16
100,000	Commercial of Eng.	5	—	2,000	Ditto Royal	500	600½
1,000	Commer. of London	200	165	100,000	Manch. & Liver. Dis.	15	10
20,000	Colonial	25	14½	100,000	Manchester	10	4½
20,000	East of England	10	7½	50,000	Manchester & Salford	10	10
10,000	Gloucestershire	10	25	20,000	National of Ireland	17½	14½
4,000	Ionian	25	24	10,000	Natl. Provl. England	35	35
10,000	Leeds Banking Co.	15	16	60,000	North & South Wales	10	6½
30,000	Leeds & West Riding	6½	8½	20,000	Provincial of Ireland	25	41½
60,000	London & Westminst.	20	23½	20,000	South Lancashire	7½	6½
60,000	London Joint-Stock	10	12	20,000	W. of Eng. & S. WalesD.	12½	17
20,000	London and County	15	15	20,000	Union of Australia	25	29½
10,000	Liverpool Albion	25	16½	60,000	Union of London	10	9½

MISCELLANEOUS.

Shares.	Company.	Paid.	Price	Shares.	Company.	Paid.	Price
10,000	Anglo-Mexican Mint	10	12	2,100	Hungerford Market	100	31½
10,000	Anti Dry-Rot	16½	2	100,000	Iberian Mercantile Co	—	1½ 2
10,000	Asphalte (Claridge)	4	½	1,000	London Corn Exch.	37½	25
10,000	Assam Tea Company	12½	4½	6,000	London Caoutchouc	12½	15
10,000	Austral. Agricultural	28l.7s.	15½	3,000	London Cemetery	20	18
3,473	Australian Trust Co.	35	36½	6,000	Lon. Rever. Int. Soc.	10	6
12,500	Bitumen Bastenne	3½	½	15,000	Met. Pat. Wood Paving	6	6½
10,000	Ditto Polonceau	2	½	20,000	Mexican & S. American	7	4½
6,000	Brit. Amer. Land Co.	35½	9	—	New Brunswick (Ld.)	60	15
4,000	Brit. Loan & Dis. Inst.	2½	3½	6,022	Peninsular & Oriental	30	33
9,000	Brit. Rock & Pat. Salt.	20	12	3,287	Rever. Int. Society	100	100
8,915	Canada Land Co.	32½	41	15,000	Royal Mail Steam Pct.	50	12
3,000	E. C. of Crn. Amr. Deb.	20	2½	2,000	Shott's Iron Foundry	40	36
3,100	Droitwich Patent Salt	25	13½	14,000	South Australian	30	17
2,700	Equitable Rever. Soc.	65	61	2,000	Ship Owners' Towing	7½	15
20,000	Gen. Steam Navig.	14	27½	4,000	Thames Tunnel	50	5½
5,000	Gen. Rever. Int. Soc.	100	100	10,000	Van Dieman's Land	18½	5

CURRENT PRICES OF MATERIALS IN CORNWALL,

AS SUPPLIED AT THE PRINCIPAL MINES.

Common iron, per cwt.	8s	0d	Barrow bends	7s	0d
Half-inch square	8	6	Sheet lead	20	0
Five-eighth ditto	7	6	White ground lead	28	0
Best tough whim chain	20	0	Red lead	18	0
Boiler plates	9	6	Tallow	44	0
Whim kibble ditto	12	0	Candles, per dozen lbs.	6	0
Hoop iron	8	6	Gunpowder, per 100 lbs.	40	0
Best rolled iron	8	6	Leather bends, per lb.	1	4
Charcoal iron	23	6	Ropes	28	0
Inch ditto	11	0	Flat ropes	30	0
Half-inch ditto	12	6	Hemp	40	0
Blistered steel	30	0	White yarn, per cwt.	36	0
B ʒ steel	30	0	White rope	39	0
Nail rods	11	0	Engine chap	0	0
Miners' shovels	20	0	Stockholm tar	25	0
Ditto steel pointed	40	0	Linseed oil, per gallon	3	0
Board nails	16	0	Rape ditto	4	0
Half-board ditto	20	3	Brass-wire sieves	40	0
Hatch ditto	17	0	Iron-wire ditto	20	0
Half-hatch ditto	20	0	Iron-wire work, per foot	1	0
2d. nails	14	0	Machine bottoms	13	0
Five-inch spike ditto	13	0	Salt	1	0
Casting ditto	15	6	Birch, per foot	1	4
20 lbs. nails	18	6	Pine	48	0
14 ditto	19	6	Shovel hilts	2	0
Coals, per ton, at quay	9	6	Pick hilts	1	4

BANK OF ENGLAND.—Quarterly Average of the Weekly Liabilities and Assets, from the 20th of May, to the 12th of August, 1843, both inclusive:—

LIABILITIES.		ASSETS.	
Circulation	£19,[illegible]	Securities	£21,[illegible]
Deposits	11,[illegible]	Bullion	11,[illegible]
	£30,[illegible]		£33,[illegible]

Downing street, August 16.

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